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THE
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VOLUME THE FOURTH.

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PREFACE.

THIS work was undertaken by two Physicians and two Surgeons who had the care of considerable Hospitals in Dublin, and who were anxious to contribute to the improvement of their Profession, by thus affording every facility for the publication of select communications in Medicine and Surgery. They conceived that many intelligent practitioners, who would shrink from an application to have their Essays admitted into a collection published by strangers, might be induced to communicate the results of their observations and experience, were a respectable depository established in this country.

In a few months after the Editors had planned their work, and while they were arranging the materials of the first volume, an Association of the Fellows and Licentiates of the King and Queen's College of Physicians

was formed, chiefly with a view to the publication of papers written by the members and their friends. This Association has published four Volumes of Transactions, and there can be scarcely a doubt that in these are contained many dissertations, which would have enriched this work, had not another channel of the same nature offered itself for conveying them to the public.

Immediately after the publication of the first Volume of the Dublin Hospital Reports, one of the Editors, the late Dr. Edward Percival, left Dublin, and established himself in Bath. By his removal the work lost the assistance of an able and active supporter.

In the course of last year it again sustained a severe loss by the death of another of the Editors, the late Professor Todd. No person, acquainted with the character and attainments of that excellent surgeon, can suppose that it would be easy to supply his place. Uniting much sagacity and discrimination, with great kindness of disposition and remark-

able amenity of manners, few men possessed, in a higher degree, the valuable quality of beguiling labour of its weariness. His death, deeply felt by his remaining colleagues, has determined them to bring the first part of this work to a close, by the publication of the present volume.

The Editors, while they embrace this opportunity of explaining some of the difficulties which have impeded their progress, have the pleasure of announcing that several professional gentlemen, who have already contributed to the reputation of this work, have been prevailed upon to join with them in undertaking a new series, the first volume of which may be expected in the course of next year.

J. C.

A. C.

March 1st, 1827.

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REPORT
OF THE
AMPUTATION OF PORTIONS
OF THE
LOWER JAW,
PERFORMED AT STEEVENS'S HOSPITAL;
By JAMES WILLIAM CUSACK, A. B. M. D.
PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND,
LECTURER ON ANATOMY AND SURGERY,
&c. &c. &c.

THE animal structure of bone throughout the whole osseous system, is liable to become the seat of certain morbid growths, which occasion different degrees of suffering and danger, according as they vary in magnitude, character or situation.—Such tumors frequently occur in the maxillary bones; causing, from the peculiarities of their situation, not only great deformity and distress, but, in many instances, the death of the patient.

These morbid growths are remarkable for having their origin in the medullary structure of the bone; to attempt therefore the removal of the

disease by the knife, cautery or other means, has been found not only ineffectual but injurious ; any violence thus offered to the part being uniformly followed by an encreased rapidity of growth and aggravation of all the symptoms.

Amputation or excision of the entire of that portion of bone in which the disease has its origin, is the only measure that can be relied upon to ensure success ; and this operation, although often perhaps impracticable in the superior maxilla, may be performed with more ease and safety, when the disorder is situated in the lower jaw, than could have been at first imagined.

Those diseases which require amputation of the inferior maxilla, are either cancerous affections, commencing in the soft parts and contaminating the bone by their continuity ; or morbid growths originating in the medullary structure and endangering life by their effects upon the system generally, or their interference with the functions of the neighbouring organs.

In true cancer, commencing in the lips or cheek and secondarily affecting the bone, the uncertainty of being able to extirpate every germ of the disease, and thus secure the patient against a return of the complaint, forms a serious objection against the employment of this operation.—A similar objection however does not apply in those cases popularly denominated fungous tumors of the

maxillary bones. In such instances the disease is more purely local, being primarily confined to the osseous texture, and incapable of contaminating the adjacent soft parts, or of affecting the system through the medium of absorption.

Effectually to extirpate the diseased structure, and secure the patient against a return of the complaint, amputation of a part or the entire of the jaw can, alone, be relied upon ; and this operation, although so formidable in appearance, and often rendered complex and tedious by the situation or extent of the disease, may in general be performed with success and safety ;—even the excision of the bone from the articulation, being attended with less difficulty or danger than could have been, at first, anticipated.

Amputation of the lower jaw, has been but seldom performed in this country, although the operation is not uncommon upon the continent ; in one instance only, as shall be hereafter noticed, does the removal of the bone from the articulation appear to have been attempted ; and of this case no particulars, so far as I can recollect, have been recorded in any of our journals.

Before we can duly appreciate the advantages to be derived from amputation of the inferior maxilla, we must contrast the hideous deformity and cruel sufferings consequent upon the presence of tumors in this situation, with the comfort and safety secured

to the patient by the performance of this operation. The loss of even large portions of the lower jaw is, in general, attended with but little inconvenience, and scarcely any perceptible deformity ; while the extirpation of the original seat of disease is the best security against any return of the complaint.

CASE I.

Honora Doyle, *ætat.* 46, a country woman, of a healthy constitution, was admitted into the hospital, June 21st, 1824. She gave the following account of the commencement and progress of her complaint.—In May 1818, she found it necessary to have the second molar tooth of the left side of the inferior maxillary bone extracted : about six weeks afterwards she received a severe blow on her jaw, exactly over the situation which the tooth had occupied : this injury was not immediately followed by any unpleasant consequences, and was almost forgotten, when, in the succeeding September, her attention was excited by the appearance of a small tumor about the size of a hazel nut, which protruded from the vacant alveolar space. The swelling, when first perceived, was firm, elastic to the touch, and almost insensible to pressure. According to her statement, it was unattended, in its incipient state, with any painful sensation ; its progress was at first so slow as to be almost imperceptible, but in some weeks the swelling had become visible externally. She then applied for assistance to an apo-



the cary, who pushed a lancet into its centre : this wound produced a profuse hemorrhage, which was suppressed with difficulty. She subsequently made application to other practitioners, by some of whom incisions were made, which were followed by similar results : she also stated, that, after each incision, the tumor evinced a greater disposition to enlarge. At the expiration of the first year, the tumor had engaged a large portion of the bone, advancing towards the chin, and expanding inwards, so as to impede the motions of the tongue and prevent mastication. Still she was free from pain, and experienced no inconvenience except what depended on the size and situation of the swelling.

About this time she again applied to a neighbouring surgeon, who made a very deep incision into the centre of the tumour : this operation was followed by an immediate and rapid extension of the disease. Discouraged by these repeated failures, no further application was made for relief until the rapidly increasing size of the swelling, which now impeded respiration and deglutition, combined with the distress occasioned by profuse ptyalism and occasional hemorrhages, induced her to come to town, with the determination of submitting to the performance of any operation that might be proposed.

When she presented herself at the hospital, I found almost the entire of the left side of the

lower jaw involved in the disease,—the tumor projected outwards, and caused much deformity, the jaws being separated by a portion which protruded between the teeth, and prevented the closure of the lips. On inspecting the cavity of the mouth, the tumor appeared to consist of three branches, involving the bone in their centre ; the first, or outer, formed the prominence which was visible externally ; the second, ascending between the upper jaw and cheek, and distorting the countenance, reached as high as the margin of the orbit ; the third, filling up the sublingual cavity, elevated the tongue, and pushed it to the opposite side : this portion likewise extended so far backwards as to press on the anterior arch of the palate. The teeth were observed on the surface of the tumor, sunk into its substance, and perfectly moveable. The entire portion of the jaw, included between its angle on the left side and the last incisor tooth on the right, was more or less affected.

The situation and extent of the disease will explain the nature of her sufferings. She complained of difficulty of respiration and deglutition, articulated indistinctly, and was unable to take nourishment, except in a liquid state. A continued discharge of saliva, mixed with bloody sanies streamed over that portion of the tumor which protruded from her lips. Her general health, however, might be considered good ;—she had not yet suffered much constitutional disturbance, and preserved a tolerable appetite. Under these circum-

stances, the rapid increase of the disease threatening soon to put a period to her existence, it was decided, in consultation, to attempt the removal of the diseased portion of bone, as the only measure that afforded a prospect of saving the patient's life.

On Friday, July 7th, I proceeded to the operation, in presence of the surgeons of the hospital, Messrs. Crampton, Peile, Colles, and Wilmot.—The patient was seated on a chair, her head supported, and inclined to the left side : this position being deemed preferable to the recumbent posture, as best calculated to favor the escape of the blood, and prevent its accumulation in the fauces.

Standing before the patient, I commenced by making an incision from the commissure of the lips, on the right side, which, passing obliquely downwards and dividing the parts completely through, terminated about half an inch below the base of the jaw ; the bone being thus laid bare, was divided by a small hand saw through the alveolar process of the right canine tooth, which had been previously extracted. The next incision extended from the lobe of the ear, in the direction of the ramus, to the angle of the jaw ; and both were connected by a third, carried parallel to the base. Dissecting up the flap, thus formed, I divided the masseter muscle, which was expanded over the anterior surface of the tumor ; and denuded the bone midway between its angle and condyle. A needle, to which the chain saw had been connected, was passed behind the ramus,

the point being kept close to the bone ; the saw moved with so much ease and freedom, that the patient did not appear sensible of the division of the nerve. I then pressed the tumor downwards, to put the soft parts (attached to the bone internally) on the stretch ; and concluded the operation, by cutting across the muscles connected with the base of the jaw, exactly at their point of insertion.

The hemorrhage was inconsiderable ; the dental, and some branches of the facial artery, were secured by ligatures ; dossils of lint were placed in the cavity, to give support to the cheek ; and the divided parts brought into apposition, and retained by points of interrupted suture. A light dressing was applied, and the entire supported by a bandage and compress.

The operation was tedious, yet the patient appeared so little exhausted by its duration, or the loss of blood, that she was able immediately after to walk to her bed. She swallowed drink in small quantities, which was conveyed to the base of the tongue by means of a gum elastic tube, attached to the spout of a teapot.

In the evening (six hours after the operation) her face was flushed, her cheek hot, and slightly swollen ; but she suffered no constitutional disturbance, and appeared disposed to sleep.

Saturday.—She had slept during the preceding night, but was greatly annoyed by a profuse ptyalism, and complained of a feeling of tension in the cheek: in other respects she seemed in a comfortable state. Having removed the bandage and compress, I directed the application of the saturnine lotion, and the administration of a cathartic enema.

From this date, her recovery proceeded rapidly; when suppuration was established, the dossils of lint were withdrawn through the mouth, and the wound acquired, each successive day, a more favorable appearance. Complete union of the divided soft parts followed, and on the twelfth day she was able to walk about the ward. Her articulation became gradually more distinct; she took every kind of nourishment which did not require mastication; the ptyalism, however, still remained. The natural form of the mouth had been so much altered, first by the protrusion of the tumor, and subsequently by the loss of support from the chin, that she was obliged to afford artificial assistance by means of a bandage, to the lower lip. This inconvenience diminished daily during her stay in the hospital, and scarcely any deformity was ultimately observable. She sometimes complained of the mobility of the remaining portion of the jaw, which was drawn by the action of the muscles within the line of the upper teeth, so as to require the assistance of her finger to replace it.

In six weeks after her arrival in town, she returned to the country in good health; and according to the last account which I heard from her, still continues free from any disposition to a recurrence of the disease.

CASE II.

P. Conolly, a strong healthy boy, *ætat.* 12, was admitted into the hospital, September 4, 1824.

Seven weeks previous to his admission, his attention was attracted by a small tumor, about the size of a pea, which had sprung up between the first and second molar tooth of the lower jaw, on the left side. Its appearance had not been preceded or attended by either pain or uneasiness in the bone: neither mastication nor pressure occasioned any distress.—He consequently considered it a matter of no importance, until the rapid increase of the tumor loosened the adjacent teeth, and caused them to drop out. The swelling was, in the first instance, directed principally towards the sublingual cavity, so that in a very short time the motions of the tongue and the powers of articulation, were much impeded. At the period of his admission, scarcely any deformity was perceptible; the general fullness of the cheek was just sufficient to excite attention.

On examining the mouth internally, I found the disease had engaged the bone from its angle to

See p. 198.

Plate

Fig 2

the canine tooth of the same side; the chief portion of the tumor elevating itself from the alveolar processes, inclined inwards as far as the median line: its structure was rather of a firm consistence, but capable of yielding to the pressure of the finger.

The removal of the diseased portion of the bone having been decided upon, I proceeded to the operation on the 15th of the month. I commenced by an incision through the cheek opposite the first incisor tooth of the affected side, and divided the bone with the chain saw. The second incision was carried from the symphysis beneath the base of the jaw, to the angle. The division of the soft parts in this direction, was attended with the inconvenience of wounding the facial artery, just as it turns over the jaw; its retraction under the protection of the bone subjected the patient to a greater loss of blood than could have been safely borne, had he been of a very delicate habit. The succeeding steps of the operation were conducted as in the former case, the bone being sawn through at the same points above the angle.

This boy recovered without the occurrence of a single bad symptom. In ten days the wounds were perfectly healed, and he returned to his friends, enjoying the powers of mastication with the remaining portion of the jaw.

CASE III.

John Campbell, ætat. 14, came to town from a northern county, with the determination of submitting to the removal of a tumor, which engaged the right side of the lower jaw, extending from the angle to the first incisor tooth; externally, the cheek was slightly prominent; internally, the swelling projected about two inches beyond the line of the bone: its texture was soft, and its superior surface indented by the teeth of the upper jaw; it bled when it was rudely touched, or when pressed on in mastication.

The patient stated that the appearance of the tumor was neither preceded by injury, nor accompanied with pain. His attention was first excited by a small body about the size of a large pea, which projected between the last two molar teeth: its appearance he dated at a period of three years previous to his arrival in town.—If this statement is to be relied upon, the progress of the disease must have been unusually slow.

I removed that portion of bone included between the point of separation of the processes and the second incisor tooth of the affected side. The section through the bone was made with the chain saw, and the operation concluded in the manner already described. The patient left the hospital in three weeks, perfectly recovered, and enjoying the power of mastication with the remaining portion of the jaw.

AMPUTATION AT THE ARTICULATION.

The success which had attended our former operations, suggested the possibility of extirpating the jaw at the articulation.

The practicability of this measure was fully discussed, and the anatomical relations of the joint carefully considered.—The danger of hemorrhage appeared to present the only serious objection against the undertaking ;—the proximity of the ramus of the jaw to the termination of the external carotid artery, and the near relation of the internal maxillary to the articulation, seeming to render it impossible to disengage the joint without wounding one of these vessels.

A little careful examination, however, will shew that neither of these arteries is in immediate contact with the jaw. The internal maxillary, which would appear more exposed to danger, inclines backwards in its passage behind the neck of the condyle, being distant about a quarter of an inch from the bone ;—the natural structure of the joint

allows this distance between the artery and articulation to be still farther increased ; so that by sawing the bone through at any point, and separating the attachment of the temporal muscle, the capsular ligament may be opened anteriorly, the condyle dislocated and the jaw disengaged, without endangering any vessel of consequence.

From the detail of the following cases it will appear that exarticulation is not only practicable, but not necessarily attended by any danger of formidable hemorrhage, from the proximity of the carotid or its branches.—The preliminary step, therefore, of securing this artery in amputation of the jaw, as practised by Dr. Mott, must be regarded as rendering the operation unnecessarily complex.

Through the kindness of my friend Dr. Graves, I have lately been made acquainted with the fact of Græfe having amputated the jaw at the articulation.—No particulars of this case have appeared in our journals ; but the precaution of tying the external carotid, which he was induced to adopt before commencing the operation, appears to me, with all due deference to such authority, just as unnecessary as Dr. Mott's practise of securing the main trunk of the vessel.

CASE IV.

James Heron, ætat. 30, of a good constitution, was received into the hospital, May 6, 1825.—Some months previous to his admission he felt acute pain in the last molar tooth of the left side of the lower jaw. The pain was so fixed, and so like a common tooth ache, that he had the tooth extracted. A short time after its removal, he observed a small tumor emerging from the vacant space. The progress of this tumor was slow, but it continued to extend itself outwards, so as to become prominent in the cheek ; and inwards, so as to displace the tongue and press it to the opposite side : six months only had elapsed from the extraction of the tooth until his arrival in town. I found the tumor situated immediately in front of the angle of the jaw, the bony prominence of which it had completely obscured. Superiorly, it extended beyond the zygoma ; internally, it occupied one half of the sublingual space. The bone was enlarged, and the teeth loosened as far as the first incisor tooth on the same side. He complained of the inconveniences resulting from the interruption to deglutition and articulation ; but was free from any other distressing symptom, except a pain occasionally felt in the centre of the bone, shooting upwards to the ear. It was evident, that the angle and ascending branch of the bone were the parts principally engaged, and

that the extent of the disease would probably require the removal of the bone at the articulation.

On Friday, May 13, the patient being seated on a high chair, in the position already described, I commenced the operation by an incision, extending from the commissure of the lips of the affected side to the base of the bone, which was divided at the second incisor tooth: another incision, beginning at the zygoma, was carried down over the articulation and in front of the ramus, terminating at the angle. The third, connecting the two former, passed obliquely upwards and outwards, from the termination of the first. I then dissected the cheek from the anterior surface of the tumor, which was obscured by the expansion of the masseter muscle. This being divided, the extent of the disease could be more readily ascertained. A portion of the tumor, ascending under the zygoma, completely filled up the space beneath the arch; and, from its size and position, retained the processes immoveably fixed, preventing the operator from using the jaw as a lever in the dislocation of the condyle. Under these circumstances, I decided on cutting across the ramus above the angle.

Having accomplished this object, I removed the section of bone included between the two divisions, with the corresponding part of the tumor. As the room thus obtained enabled me to ascertain that the coronoid process was partly absorbed and

distinctly separated from the condyle, I directed my attention exclusively to the articulation.

Mr. Colles, seizing the extremity of the ramus in a strong pair of forceps, pressed the condyle against the anterior part of the capsular ligament; by this means the joint was penetrated with more safety and facility. I next enlarged the opening with a blunt-pointed bistory, sufficiently to allow the protrusion of the head of the bone and the separation of its remaining connections with the capsule, as well as the division of the attachment of the external pterygoid muscle. The operation was concluded by the removal of that portion of the tumor which was seated beneath the zygoma.

It is remarkable that no vessel except the facial artery required a ligature, the hemorrhage from all the others ceasing immediately after their division. Small dossils of lint were placed in the cavity to give support to the cheek, which was then replaced, and retained in its situation by three points of interrupted suture; the inflammation which succeeded the operation was comparatively trifling, the external wound healing by the first intention. A small abscess which formed in the vicinity of the glenoid cavity, was the only circumstance that occurred to retard the patient's recovery.

CASE V.

Mary Passmore, *stat.* 24, of a pale and delicate appearance, was admitted into the hospital May 27, 1825. She stated that she had enjoyed general good health until she attained her nineteenth year; about which period she was seized with a very severe pain in the last molar tooth of the right side of the lower jaw; her sufferings were sufficient to induce her to submit to its removal; the extraction was effected with much difficulty, and was succeeded by so much inflammation, that she was unable to open her mouth for several days. About three weeks afterwards she felt a small tumor in the situation lately occupied by the tooth; it was firm, and resistant to the touch, but not insensible, some uneasiness being complained of after pressure. The progress of the disease was at first slow, the tumor having scarcely attained the size of a walnut at the expiration of three months. In the course of the first year, the swelling acquired just sufficient bulk to become visible externally; its advancement was marked by frequent paroxysms of acute pain, which were occasionally so severe as to deprive the patient of rest. During the second year the swelling continued gradually to extend along the bone towards the chin; the molar teeth having successively become loose and painful, were removed. In the course of this year the bone snapped across, about the situation of the canine tooth, in the attempt to

chew a hard crust ; and the pain attendant upon this accident, was so excessive as to cause the patient, to faint. From her statement it would appear, that the fractured extremities became united at the expiration of five weeks ; but the union was accompanied with such an extension of the disease as completely to involve the part which had sustained the injury. It is unnecessary to detail minutely the various additions to her sufferings, occasioned by the gradual extension of the disease. During the year previous to her admission, she was so much incommoded by the size and weight of the swelling, that she was compelled to confine herself to her chair. Deglutition, respiration, and articulation, were all more or less impeded ; and her health obviously impaired. The uterine secretion was suspended ; she lost her appetite ; became pale and emaciated, and suffered from occasional attacks of hæmatemesis.

Previous to admission into the hospital, her general health became so much deranged that she was obliged to confine herself almost entirely to bed. On examination, I found that the tumor had engaged the entire extent of the jaw, from the articulation on the right side to the dens cuspideus on the left ; the principal bulk of the swelling extended itself laterally, inclining outwards and downwards, and distending the soft parts so much that they appeared on the point of giving way : inwards, it occupied the entire sublingual space, passing the median line, and touching the ramus

on the opposite side, by which portion the tongue was elevated, and its tip brought into contact with the *velum palati*. The disease had extended to the articulation, and the coronoid process was so much expanded as completely to prevent any motion of the affected side; while the mouth, which was kept permanently open, gave passage to a continued stream of saliva. This tumor evidently differed in structure from those I had previously met with; it was more dense, the surface being smooth and yielding to the impression of the finger; but its parietes possessed so much elasticity as immediately to resume the same uniformity of aspect, upon withdrawing the pressure. The incisor teeth still remained, and in consequence of their looseness, occasioned much distress.—The general health, as I have before observed, had suffered considerably; but little nourishment could be taken, and that with much difficulty.

This was evidently a most formidable case; the constitution of the patient was broken down; the tumor extensive; the processes enlarged so as to prevent motion; and the integuments so much distended as to leave ground for apprehension that they would not be able to preserve their vitality after an operation. On the other hand, the solidity of the tumor seemed to afford an assurance of greater facility in separating it from its surrounding connexions.—I was supported by the

favourable opinions of my professional brethren, and emboldened by previous success.

On Friday, June 3d, she submitted to the operation; the preliminary arrangements for which were made in the manner before described. The mental portion of the bone was divided by the chain saw, at the situation of the first molar tooth of the left side. This step of the operation was rendered tedious by the restlessness of the patient; she depressed her head towards the sternum, and offered much resistance to the use of the saw. The transverse incision through the cheek was inclined upwards, in the direction already noticed. A third was made over the articulation, and continued downwards, to unite with the second. The division of the soft parts had been hitherto attended with a profuse hemorrhage, much exceeding what had been contemplated. The vessels however contracted speedily on being divided, yet the total quantity of blood lost was considerable. After the separation of the cheek, and the complete exposure of the anterior surface of the tumor, the bone was found so immoveably fixed from the expansion of the processes, that I could not venture farther in the dissection without danger of wounding the vessels beneath the base of the jaw. In this dilemma, I divided the tumor about an inch below the articulation, and quickly separated the portion included between the two sections: ample opportunity was thus afforded for clearly ascertaining the nature of the difficulties I

had still to encounter. So completely had the coronoid process filled up the infra zygomatic space, that the detachment of the insertion of the temporal muscle proved both difficult and tedious : after it had been separated, I proceeded to the removal of the condyle. Having fairly exposed the anterior surface of the articulation, I perforated the capsular ligament, and finally completed a tedious and disgusting operation, during which the patient had fainted several times, and rejected the contents of her stomach. The integuments having been replaced, and the wound dressed in the usual manner, she was removed to her ward and placed in bed ; when she exhibited but feeble signs of animation, and remained in the same state of exhaustion for several hours. Her countenance was pale, skin cold, and pulse scarcely perceptible. Reaction took place but slowly ;—in twenty-four hours after the operation the lip and cheek were still cold ; yet from this period little trouble was experienced ; a mild inflammatory action succeeded, and in six weeks she was restored to her friends, fat and healthy.

It was remarkable that in this case the cheek still retained a natural prominence, a newly formed structure appearing to occupy the place of the bone, and scarcely any perceptible deformity resulting from the loss of so large a portion of the lower jaw.

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CASE VI.

James Mahony, ætat. 35, presented himself at the hospital in the month of January 1825. According to his statement, he enjoyed general good health previous to 1821. In the course of that year he submitted to the extraction of the last two molar teeth of the right side of the lower jaw, in consequence of acute pain in the bone, which he regarded as tooth ache. The teeth were extracted at different times. A complete remission of any uneasiness was experienced for about three months after the removal of the first; but a recurrence of the pain at that period led to the extraction of the second. In the spring of 1822, he accidentally received a severe blow on the same side of the jaw. At the instant, he suffered acute pain, and was sensible of a feeling, as if something had given way within the bone. A very free hemorrhage was consequent upon the injury. Immediately after this accident he became for the first time sensible of the existence of a small tumor, occupying the situation of the teeth which had been removed.

The growth of this swelling was very rapid, and attended with severe pain in the bone. Alarmed by its increase, he made several applications for relief; but deriving no advantage from the remedies used, he abandoned all hope, and determined to make no further attempt for obtaining

its removal. The swelling still continued to increase in volume, and expanding itself in every direction, soon gave rise to those impediments to deglutition and respiration already so often referred to.

In the autumn of 1824, his general health was seriously affected; he became emaciated, and suffered from night sweats and continued cough. Being destitute of every means of support, he determined to make application at the hospital, although without any expectation beyond that of obtaining temporary subsistence.

At the time of admission, the tumor had engaged the right side of the jaw; the cheek being distended to such a degree by its protrusion externally, as almost to present the appearance of a second head. The integuments had suffered much from distension, and were traversed by numerous small veins, which ramified over the cheek: internally, the tumor filled up the mouth, and displaced the tongue; passing backwards it rested on the anterior surface of the palate; and advancing forwards, protruded from between the lips, and forced the jaws to remain permanently separated.

His general health has been already described as having suffered much; he had become greatly emaciated, and was afflicted with a sensation of constriction about the præcordia, accompanied with an incessant cough, which seized him when-

ever he attempted to rest in the recumbent position. At a consultation held immediately after his admission, it was determined, that, independently of the formidable nature of his disease, the existing state of the patient's constitution, forbade any attempt at operation.

The miserable and destitute condition of this poor man however, joined to a faint hope that something might still be effected for his relief, induced me to permit his stay in the hospital. I watched carefully the progress of the disease, administered such palliative remedies as the occasional symptoms required, and had him supplied with as much soft nutritive food as he could consume.

About three months after this date, the integuments had suffered so much from distension, that inflammation supervened over the central portion of the tumor : a slough, about the size of a crown piece, was formed and detached, leaving an opening which continued gradually to enlarge. Through this opening a mass of soft florid granulations protruded, which, after having attained a certain magnitude, being no longer capable of supporting their vitality, sloughed away, and were quickly succeeded by a new series, which passed in their turn through similar changes;—their structure appeared to be highly vascular, the slightest irritation causing considerable hemorrhage.

During the summer months his general health continued nearly stationary ; but the local disease progressively advanced along the bone, engaging the right side and centre of the mental portion of the jaw. The patient appeared, however, to suffer less from the cough, the general pressure on the larynx being most probably diminished, in consequence of the unrestricted liberty afforded to the tumour of extending itself externally through the opening in the cheek, which at this period, had attained a diameter of about three inches.

In the month of September, contrary to general expectation, a decided abatement manifested itself in the severity of the constitutional symptoms ;—although debilitated from confinement to bed, and a profuse discharge occasionally mixed with blood, from the tumour, yet the patient seemed to have gained flesh ; his appetite had improved, his cough was diminished, and the sensation of constriction about the præcordia had altogether disappeared : his pulse was 80, and regular.

This unexpected improvement in the state of his general health, seemed a favourable opportunity for complying with his constant desire that something should be attempted for his relief.

Induced by the urgency of the case and the earnest entreaties of the patient, I had again recourse to my professional brethren for support,

and having obtained their approbation, proceeded on Friday, 7th October, to the performance of the operation.

The position of the patient, and all the preliminary arrangements, being disposed exactly as in the preceding cases, I commenced the operation by an incision, which connected the commissure of the lips of the affected side to the nearest point of the newly formed opening in the cheek. A second incision descended along the inner border of the opening. A third was prolonged in the direction of the symphysis, towards the left side, as far as the second molar tooth, which had been previously extracted. I next dissected off the flap thus marked out. The instant the separation of the under lip was completed, a large mass of the tumour, which had been supported and retained by this barrier, burst forth, presenting a congeries of fungous or granular masses, which separated into distinct portions: the sight was so appalling and unexpected, that many present were alarmed for the result. It was however too late to recede: I directly applied the chain saw through the alveolar process, from which the tooth had been removed. I next circumscribed the chasm in the cheek, by two incisions, which were extended outwards, and united over the external side of the tumor; another incision being made in the direction of the condyloid cavity, and prolonged downwards to the point of union.

I then proceeded to expose the anterior surface of the tumor, when upon minute examination, it was found that no trace of the right side of the jaw bone existed; the whole having degenerated into a softened structure, separated into distinct portions by deep fissures. To insulate the entire disease at once, was impossible; I therefore removed the mental portion in the first instance; and by a little care, was able to accomplish the separation of the entire mass, although broken up into several pieces: in this part of the operation, the cutting edge of the knife was used as little as possible. The salivary glands were completely laid bare, being exposed to view with all the vessels and nerves which lie under the angle and base of the jaw.

These different parts, with the surrounding structures, were ascertained to be perfectly healthy. The diseased mass rested in a bed of cellular substance, which greatly facilitated its removal. It was a curious fact, that no trace of either of the processes could be observed: indeed, so perfect was the disorganization, that only about one inch of *bone* was obliged to be removed. The quantity of blood lost during the operation was not very considerable, the few vessels that required a ligature being readily secured. The chasm which remained was filled up with lint; the edges of the wound approximated, and retained by points of interrupted suture. After having been

placed in bed, the patient was somewhat feeble, and continued weak for several hours; but was, in a short time, restored by the use of some simple cordials.

This man's general health improved rapidly; he was soon able to leave his bed; his wounds all quickly healed, with the exception of a small fistulous opening, which continued to discharge saliva from the most depending part of the cicatrix; this opening has, however, since perfectly closed, and he continues to enjoy good health, free from any appearance of a return of the disease.

CASE VII.

Since the foregoing report was prepared for publication, I removed the entire of the left side of the lower jaw in a healthy female. Her case was one of minor consequence, compared with those above detailed; but as it alone proved fatal, I shall subjoin a brief notice of its history and progress.

Catherine Kenny, ætat. 30, was admitted into the hospital, June 9, 1826. She had suffered for several years from a disease of the lower jaw, which commenced with pain in the first molar tooth of the left side, so acute as to force

her to submit to its extraction: a slight fulness soon after became perceptible in the bone. This tumefaction slowly increased, and was attended with pain, which subsided at intervals: during some of those paroxysms she submitted to the removal of the remaining molar teeth: she stated that the hemorrhage after each operation was very considerable, and that the blood was mixed with a thin limpid fluid.

During the six months previous to her admission, the advance of the disease became more decided; the tumor increased rapidly, and she suffered much from pain, difficulty of mastication, and interruption to the motions of the tongue.

On Friday, June 16, I performed the operation of disarticulation, which was executed expeditiously, and without the slightest untoward occurrence. The dressings and after treatment were precisely the same as in the preceding cases. On the fourth day I withdrew the sutures; union appeared to have been established in the entire line of the incision, with the exception of a space, about half an inch in length. I was therefore led to entertain little doubt of the successful issue of this case.

On the following morning (the fifth from the operation,) I found appearances much altered for the worse. She had passed a sleepless night; her pulse was quick, slight chilliness was complained

of, with a cessation of weakness at the stomach. Her cheek was a little swollen, and a shade of redness could be distinguished round the open space in the line of the cicatrix. On the sixth day erysipelas had extended over the entire cheek, but the symptoms were so mild that we still augured favorably of the result.—On the seventh and eighth days, the chances of recovery did not appear diminished: the swelling had subsided in the part of the cheek first affected, and had extended more to the opposite side. The constitutional symptoms still continued mild, and her intellect remained undisturbed.

On the morning of the ninth day, however, I found her much sunk, her pulse 120, small and weak; she was perfectly collected, but complained of dyspnoea with difficulty of deglutition, and also of a pain, which she referred to the ensiform cartilage. From this time, she continued to sink gradually in strength, and expired early on the following morning.

DISSECTION.

Having been afforded an opportunity of examining the body, I ascertained that the inflammation had extended itself into the cellular texture surrounding the larynx; the cells contained a sero-purulent fluid, in small quantities, and the mucous membrane of the glottis was elevated in two small circular points: but the morbid appearances were

not as distinct as I have been accustomed to find, when death has followed upon diffused inflammation in this region. The viscera of the thorax and abdomen were healthy. The unfortunate termination of this case caused me much disappointment, yet I was not unprepared for the occurrence of such an accident. Fatal cases of diffused inflammation succeeding to operations in the vicinity of the base of the jaw, are by no means unfrequent. Not many years since I lost a patient in a similar manner after the removal of a small diseased gland, connected with cancer of the lip : erysipelas set in on the third day, and death took place on the sixth. In this individual, the entire cellular texture surrounding the larynx and pharynx participated in the disease, the same morbid appearance being likewise visible within the thorax, in the course of the trachea and œsophagus.—The following notice of a somewhat similar termination of a case of Dupuytren's is to be met with in the new edition of the " *Medicine Operatoire*" of Sabatier, page 565, tome 4.

" M. Dupuytren a pratiqué déjà huit à dix fois
" l'amputation de la mâchoire inférieure, de l'une
" ou de l'autre manière. Un seul malade fut
" affecté après elle d'inflammation grave à la base
" de la langue, et de cette infiltration des bords
" de la glotte, que l'on est convenu de désigner
" sous le nom d'angine œdémateuse, il succomba."

The death of a patient under the circumstances

just detailed, however much to be regretted, cannot be urged as an objection against amputation of the jaw, or an argument against the success of the operation. The fatal consequences of erysipelas occurring after operation in hospital practice, should be regarded as a general warning against the use of the knife, at certain periods when this disease is known to prevail, rather than an argument against the employment of any particular operation.

I shall subjoin a brief summary of the method employed in the performance of the foregoing operations, and notice the means taken to avoid some difficulties which had, at first, caused much embarrassment. It is not my intention to give a general history of the operation as performed by others, nor to attempt an enumeration of the various methods which it might be found necessary to adopt. The experience and judgment of the surgeon must direct him in adapting the particular steps of the operation to the emergencies of the case.

All teeth, the removal of which was necessary to permit the free division of the bone, were extracted on the day previous to operation.

The patient was seated in a large chair, the head well supported by an assistant, and the affected side turned towards the operator.

The first or mental incision varied according to the situation and extent of the disease ;—but wherever commenced, I did not find it necessary to continue this incision further below the base of the jaw, than was just sufficient to lay bare a sound part of the bone and give free room for its division.

To effect this object, a small hand saw was in some instances employed ; the difficulty of protecting the soft parts from laceration however, and the interruptions occasioned by the restlessness of the patient, will often render the use of the chain saw more expedient.

I must confess that some delay was experienced, in the first instance, in endeavouring to introduce this saw, and afterwards from the liability which the instrument had to become ‘locked.’

The facility acquired by practice, however, enabled me in the latter operations, in a great measure to overcome these inconveniencies. The flat curved needle, used for the introduction of the saw, must be sufficiently wide to make a free opening for the passage of the instrument :—the point was introduced from below upwards, and kept close to the bone, so as to avoid the possibility of injuring any neighbouring vessel.

The chain saw should not be above fifteen inches in length, but much stronger than those commonly

in use:—more than one should be furnished on the occasion, to provide against accidents; and the operator should endeavour to render himself expert in the use of the instrument by previous practice.

Thus far, the operation was attended with little hemorrhage.

The next incision (when a large portion of the jaw was to be removed, as occurred in all my cases) commenced a little anterior and superior to the lobe of the ear; was continued down to the angle of the jaw, being carefully kept within the line of the bone, so as to avoid the possibility of wounding any neighbouring vessel; and then carried in a circular direction about quarter of an inch above the base of the jaw, so as to join the first incision.

The facial artery was now easily secured, if necessary; but when this vessel had been divided by an incision passing along the edge of the bone, its retraction within the cellular substance behind the jaw caused much delay and loss of blood.

When the flap was dissected up, the parotid gland, if not removed by absorption, or obscured by the extent of the disease, came into view; no injury, however, as far as my experience goes, followed the violence thus necessarily offered to this gland. The masseter muscle which is expanded over the surface of the tumor, was now cut across.

The ramus of the jaw having been thus laid bare, was divided by means of the chain saw, which was easily introduced when the bone was free from disease; but should the bone be morbidly enlarged or deeply involved in the tumor, the passage of this saw may be impracticable, and the use of the hand saw necessary: much circumspection is requisite in using the instrument in this situation.

The second division of the bone having been effected, the tumor was pressed downwards and outwards, so as to put the lining membrane of the mouth upon the stretch; this having been divided, the cellular texture easily gave way, and a large portion of the tumor could be detached without making use of the knife.

In almost every instance, the great mass of the swelling will be found situated above the line of the base of the bone, having originally grown upwards through the alveoli, and then expanded itself laterally, so as frequently, although of considerable dimensions, to leave the base or more solid structure of the bone comparatively free from disease.

Keeping this fact in view, I endeavoured at this stage of the operation to rotate the bone or tumor with some degree of force from within outwards, pressing it down so as to elevate the inferior edge of the maxilla, and enable me to di-

vide the attachment of the internal pterygoid and mylohyoid muscles, upon the bone; thus avoiding the danger of wounding any of the lingual vessels.

The divided portion of bone having been thus freed from its attachments, was next removed.

When it was necessary to extirpate the condyle from the articulation, in addition to the proceedings already detailed, the cut extremity of the ramus was now seized in a strong pair of forceps provided for the occasion, and the attachment of the temporal muscle having been divided, this fragment of bone was used as a lever to press the condyle against the anterior and external part of the capsular ligament, which was thus put upon the stretch. An opening having been made into the capsule at this part, the disengagement of the condyle was effected by a blunt-pointed bistoury, carried cautiously round the joint, and dividing the attachment of the external pterygoid muscle.

This second section of the bone may appear at first view unnecessary, when the jaw is to be removed from the articulation; but the body of the bone is, in general, so much disorganized or so deeply involved in the tumor, that it could not be used as a lever to press the condyle against the capsule: a case might occur, however, in which the second division of the bone would be unnecessary.

Some dossils of lint may be employed to give support to the flaps of the wound,—which are to be retained in their place by a few points of interrupted suture and some strips of adhesive plaster, the whole being secured by a suitable bandage.

Before I conclude this report I feel bound to make my acknowledgments to Mr. Crampton for his application of the chain saw to the division of the bone; he first, in this city, removed a portion of the lower jaw, and by his introduction of this instrument assisted much in rendering the operation more easy of execution and popular with the profession.

Steevens's Hospital,
October 1, 1826.

CLINICAL OBSERVATIONS

BY

ROBERT JAMES GRAVES, M. D. M. R. I. A.

**FELLOW OF THE COLLEGE OF PHYSICIANS, LECTURER
ON THE PRACTICE OF PHYSIC IN THE MEDICO
CHIRURGICAL SCHOOL,
PARK STREET,**

ABSCESS OF THE LIVER.

A ROBUST man, by trade a glass-blower, was admitted into the new Meath Hospital ; he laboured under well marked symptoms of acute inflammation of the liver. Although very active means were used, complete resolution of the inflammation was not induced, and for four weeks after the subsidence of the first attack, the symptoms left no room to doubt the formation of an abscess in the liver. Hectic fever, attended with rigors, night sweats and emaciation, being accompanied by a constant sense of uneasiness and weight in the right hypochondrium, which was evidently enlarged and harder than natural. It was also tender and painful at first, but after some time the pain became confined almost to one spot, which

nearly corresponded with the centre of the external elevation.

Poultices were diligently applied, but although a very indistinct feeling of deep seated softness, was soon perceptible to the touch, yet the abscess shewed no tendency to point outwards. The external swelling remained stationary and the integuments were of a natural colour. The man's constitution was now rapidly giving way, and it therefore became a most important question, Whether the abscess in the liver should be opened by an operation? To the performance of an operation it was objected, that the external tumor was very diffused and of course the situation of the abscess quite uncertain, so that an operation afforded but little chance of giving exit to the matter, and if it failed, it might for obvious reasons prove very detrimental,—any attempt therefore to open the abscess was disapproved of by the surgeons of the hospital.

Under these embarrassing circumstances it occurred to me that I had seen several cases where an incision made over a deep seated abscess had failed from its deep situation to give vent to the matter in the first instance, and yet in the course of a few days the abscess found its way to the incision and burst through it, a process explicable partly by the removal of pressure, and partly by the inflammation arising from the incision, and which served to form a connection between it and the abscess.

On these grounds, I proposed that an incision about four inches long should be made exactly over the centre of the tumor in the right hypochondrium, that it should be carried through a considerable depth of muscles, and if possible be continued to within about one or two lines of the peritoneum.

This incision was to be plugged at its bottom with lint, and thus kept open, in the hopes that the hepatic abscess might for the reasons above mentioned tend towards, and finally burst through it. The operation was performed by my colleague Mr. MacNamara. The abdominal muscles were found of considerable thickness and quite healthy, and although the incision was very deep, yet the situation of the hepatic abscess was not felt more distinctly, so that it now became quite evident that no prudent surgeon would have persevered in an attempt to open directly into it.

I now waited for the result with much anxiety. In two days after, the patient sneezed, and purulent matter in very large quantity burst forth through the wound. On examination it appeared that the incision had not been made exactly over the abscess in the liver, for the matter did not come from the bottom, but from one side of the wound, and pressure on the liver to that side caused matter to flow in abundantly. The communication between the wound and the abscess

was not therefore directly inwards, but somewhat laterally. If then we had attempted to open the abscess *directly*, we would have failed, and the consequences of such an attempt might have been fatal. Purulent matter, at first in large and afterwards in diminished quantity, flowed through the wound for several weeks, and the man perfectly *recovered*. The mode which was so successfully adopted in this case, is, I believe novel, and may prove serviceable in similar cases, many of which have hitherto been considered beyond the reach of art. Its safety is at least a strong recommendation. I have little doubt that its judicious employment may be the means of saving many lives, particularly in the East Indies, where suppuration is so frequent a consequence of hepatitis.

RHEUMATISM OF THE TEMPORAL MUSCLES CAUSING
INABILITY TO OPEN THE MOUTH.

I have seen two cases occurring in persons subject to other rheumatic affections, in which during one attack the rheumatism seemed confined nearly to the temporal muscles. The natural consequence of this complaint was inflammation and contraction of these muscles and elevation of the lower jaw, the latter being so firmly pressed against the upper jaw, that no food except in a very fluid state could be introduced.

This affection was unattended by any constitutional derangement, but caused much uneasiness in the minds both of the patients and their friends,

being by them confounded with lock-jaw. A similar error was committed also in a case where the contraction of the muscle arose from inflammation, the consequence of local injury.

In rheumatism of the temporal muscles the pain and tenderness are greatest just above the zygoma.—Its cure is easily effected by the application of leeches repeatedly to the affected part, and by the internal use of anti-rheumatic remedies.

IDIOPATHIC GLOSSITIS AFFECTING ONLY ONE HALF
OF THE TONGUE.

Mr. B. a medical student, solicited my attendance. I found him labouring under severe febrile symptoms of a week's continuance, ushered in by violent rigors, great pain in the neck and occiput; somewhat relieved on the second day by profuse epistaxis. The left half of the tongue became then very tender and painful, and gradually increased in size. At my first visit it was enormously swollen, and nearly filled the entire cavity of the mouth, which could scarcely be closed on account of the protrusion of the tongue. The right half of the tongue was perfectly natural, and its comparatively diminutive size formed a striking contrast with that of the left, the median line forming a perfect boundary between the swollen and the healthy parts. Two or three applications of six leeches at a time to the inflamed half, part

of which at my first visit appeared on the verge of gangrene, produced a speedy decrease of the tumor and inflammation. The bleeding from the leech bites was very great.

In consequence of the detumescence of the tongue, articulation and deglutition, which before had been very difficult, were quickly restored. He is at present, (two years since the attack,) able to speak perfectly, although the left half of his tongue is still perceptibly increased in size.

This case is interesting in several points of view. True idiopathic glossitis is an extremely rare disease. J. P. Frank only saw one case during his whole life.—Four cases of it have been observed of late years in different parts of Europe; * one of which is given in a German Journal, on the authority of my friend Doctor Gottel of Elbing,† a gentleman upon whose accuracy implicit confidence may be placed. In none of these cases however was the inflammation limited *to one half of the tongue*, and in none of them did it occur to the medical attendant to apply leeches to the tongue, a mode of treatment the great benefit of which, will appear by contrasting this case with those given in the Edinburgh Journal, from which it appears that this

* See Edinburgh Journal of Medical Science, No. I. p. 52.

† Beobachtung einer wahren glossitis.—Gräfe and Walther's Journal für Chirurgie, siebenter Band, zweites Heft.

disease is formidable and tedious when blood is not abstracted directly from the tongue.—Leeches were applied by Dr. Gottel under the chin, and the general antiphlogistic treatment was actively pushed :—the same was done by Dr. Maillier. In addition to these remedies, Dr. Olivet used local detraction of blood from the tongue—at first by means of incisions on the dorsum of the tongue, and afterwards by means of opening the sublingual veins. The application of leeches appears to me preferable to either.

COLICA PICTONUM.

Two cases of violent painter's colic, treated by me in the Meath Hospital, yielded very speedily to the following treatment: strong tobacco stupes were applied to the abdomen, until the peculiar effects of tobacco on the system were produced ;—cathartic pills were then given, containing some croton oil, and their effect was promoted by a purgative injection ;—copious discharges from the bowels and remission of pain were thus obtained. Tobacco stupes are preferable to tobacco injections,* because they do not act so suddenly, and they may be left off before they have produced any alarming symptoms.

* Tobacco injections were first recommended in this disease by Lentin. See his work, *Memorabilia circa Aerem, vitæ genus, &c. Claustraliensium*—(Göttingen 1779).

Their utility in dysentery,* first suggested to me their application in cases of painter's colic.

A case of paralysis after painter's colic, treated also in the Meath Hospital, received great benefit from the use of strychnine, as recommended by Magendie.

WHITISH STOOLS.

A gentleman applied to me labouring under the following symptoms:—he had been severely attacked last autumn by dysentery, then epidemic. The complaint during its acute stage, was treated in the usual manner, and the febrile symptoms and passing of blood had ceased for many weeks; he had a good appetite and tolerable digestion, but was becoming daily more emaciated and weak. He had one or two natural stools daily, without tenesmus. He complained however of eight or ten sudden calls to stool during the twenty-four hours, attended with an impossibility of resisting the bearing down and weight felt in the rectum, so that the evacuation often followed before he had time to retire to the water closet. These evacuations, were preceded by no premonitory sensations and consisted merely of two or three table spoon-fuls of mucogelatinous matter, which varied in colour and consistence, generally re-

* See Mr. O'Beirne's Paper, Transactions of the Association of the King and Queen's College of Physicians in Ireland—Vol. IV.

sembling thick milk or puriform fluid, and occasionally a transparent tremulous jelly. This fluid was evidently a secretion from the mucous membrane of the rectum in a state of irritation or sub-inflammation; such a condition of a mucous membrane constitutes the disease denominated chronic blennorrhœa, and when it occurs in the rectum produces a disease, which, on account of the white colour of the discharge, would formerly have been called, *fluxus coeliacus*,* and the evacuation attributed to the loss of chyle by stool, for the chyle was supposed to be formed, but not absorbed or carried into the system. I should not have noticed this singular mode of explaining the whiteness of the evacuations, were it not retained by the learned Dr. Good, in his Study of Medicine.† In the June number of Hufeland's Journal 1825, Dr. Rummel compares together the various descriptions of this supposed disease, given by authors, and shews the mistake they all committed in believing that there was such a disease as *diarrhœa chylosa*, the existence of which he completely disproves.‡

That Dr. Good should have retained the old species *diarrhœa chylosa*, is less surprising than that he should have inserted a new one, whose

* *Diarrhœa coelica, quæ humor lacteos, specie chyli dejectur.*—Cullen's Nosology.

† See Vol. 1. p. 233, first edition—article *Diarrhœa chylosa*.

‡ *Der Fluxus coeliacus, oder die Milchruhr theoretisch and praktisch betrachtet.*

existence rests upon still more doubtful evidence. This new species he names *diarrhœa gypsata*, from the evacuations, which consist of a matter resembling in its appearance a mixture of water and lime, which appearance he supposes actually owing “to earthy particles diffused loosely and “separately through the fluid with which they “are discharged.” *

Dr. Baillie who first described these peculiar white discharges observes, that they *seem, as to their colour*, to depend on a copious secretion of calcareous matter from the intestines; “*but that their calcareous character has not yet been put to any chemical test.*”†

As I have often seen stools of the colour here described, but which owed that colour not to the presence of lime, but to the absence of bile, and a secretion of white viscid mucus from the intestines, I must reject this species of Dr. Good, at least, until further evidence of its existence be adduced. If such a disease really exists, the earthy matter will probably be found to consist of phosphate of lime.

Viscid and whitish discharges from the mucous membranes lining the eyelids, bronchial tubes, urethra, vagina, &c. are extremely common, and

* Study of Medicine—Vol. I. p. 243.

† Good, l. c. p. 246.

depend on a state of irritation similar to that which produces the white and scanty alvine evacuations, arising from the mucous membrane of the rectum.

It is evident, from the case I have related, that chronic irritation of this part, may produce much constitutional distress. When however the affection extends beyond the rectum to the other portions of the large intestines, it occasions symptoms still more urgent. That a similar state of the mucous membrane lining the small intestines may occur, and give rise to a white secretion from its surface, is proved by examination of their contents, in persons who had died of the East Indian cholera, in many of whom white milk-like stools had been observed during life. These stools were found on dissection to depend on a secretion from the small intestines. The *diarrhæa alba*, described by Hillary, as occasionally epidemic in Barbadoes, probably arises from a similar cause.

It is unnecessary to detail the various remedies fruitlessly employed in the case above related for the purpose of checking this discharge from the rectum. None proved of any material benefit, until at length I resolved to try strychnine, on the authority of Dr. Rummel, who had employed the extract of nux vomica with great advantage in this complaint. One twelfth of a grain of strychnine,

given in the form of a pill twice a day, completed the cure in about three weeks.

Dr. Rummel observes, “ that after endeavour-
“ ing to remove the original cause of the disease,
“ the best remedies are narcotics, combined with
“ strengthening and astringent medicines. Nux
“ vomica possesses a peculiar power in control-
“ ling blennorrhœa of the rectum.” In the cases
he relates, Dr. Rummel used various astringent
tonics, as sulphate of iron and columbo, besides
medicines, such as sulphur, which are known to
exert a peculiar action on mucous surfaces. The
cure was in general facilitated by the addition of
soothing doses of hyoscyamus or opium.—These
means, combined with a judicious use of the nux
vomica, will seldom fail to check the discharge,
and restore the healthy action of the rectum.

BLACK OR VERY DARK STOOLS.

May be caused, first, by an effusion of blood
into the intestines, causing *true* Melæna :*—
secondly, by black bile. The *atra bilis*, was

* The blood effused in melæna, coagulates in the bowels, and
being exposed to heat and air, turns black and often becomes
fetid. When retained very long, the colouring matter may be
washed away and the coagulated fibrin left. In a dissection of a
woman who died of melæna at Berlin, we found in the large in-
testines many hard balls, the size of apples, and consisting of
fibrin, deposited in concentric layers, evidently the result of suc-
cessive separations from the blood, effused during several different
attacks.

looked on as the only cause of black stools, until the nature of true *Melæna* was pointed out by Hoffman, and afterwards by Home.* The presence of black bile as the colouring matter of such discharges, is acknowledged by Mr. Abernethy. “The black colour of “the discharge “shews I think, that the secretion of bile was not “healthy, and that the liver was affected with “the other chylopoietic viscera.”†

It would, I think, be easy to prove that in the very case from which Mr. Abernethy draws this conclusion, the black stools did not depend on black bile ; but on the *third cause* of such stools, viz. a secretion of dark coloured matter from the mucous surface of the alimentary canal.

I shall not however contest this point, because Mr. Abernethy acknowledges, in another place, the agency of the cause whose existence I am contending for. “It seems probable, that the “stools which resemble pitch are principally “composed of diseased secretions from the internal surface of the intestines, since they do not “seem either like the residue of the food, or “discharges from the liver.” (p. 31.) After which he adds, what appears at variance with his former opinion. “Can we suppose that all “the black and fetid matter which was discharged

* Home, *Clinical Experiments*, p. 136.

† Abernethy's *Surgical Works*, Vol. I. p. 10.

“ from the bowels in the first case, was poured
“ forth solely from the liver ?”

In a very remarkable case I had under my care, and in which very great quantities of matter, sometimes of the consistence and colour of tar, and sometimes resembling ink, were passed by stool for ten or twelve days in succession, the black colour was evidently derived from the mucous membrane.—A frequent examination of the discharges shewed that this colour was not derived from blood ; for it was quite evident that, in such a case, the blood could not have remained in the intestines very long after its effusion, for the stools were frequent and copious ; and I know by experience that in true *melæna*, blood which has been retained even for a considerable time in the intestines, will tinge water red, which was not the case here. In true *melæna* great debility and frequent fainting follow the evacuations if very copious ; but in the case here referred to, and I believe in all others of a similar nature, the discharge of the black matter is followed by a feeling of relief to the system.

Mercury had no effect on the appearance of the stools, nor was there any symptom of hepatic disease, but a temporary improvement in their appearance always followed the internal use of stimulants, such as spirits of turpentine, and the case finally yielded to the use of this and other stimulating tonic remedies. That the great quan-

tity of black matter passed by stool was owing to an increased and vitiated secretion from the intestinal mucous membrane, was proved by the following experiment: I cleaned one half of the tongue, from which I washed, with much difficulty, the black tenacious mucus. I watched it for several hours, and found that the part I had cleaned became gradually black and foul, the black mucus being evidently a secretion from its surface. Analogous to this case, is one which was formerly under the care of Mr. Wilmot, and in which large quantities of blackish mucus were discharged *from the bladder*.

CONTAGIOUS PSORIASIS.

It has been stated by Dr. Duffin in his essay on cutaneous diseases, that scaly eruptions are not contagious. The same opinion is likewise maintained by Bateman. A fact I had lately an opportunity of observing seems, however, to prove that scaly diseases may become communicable by contact under certain circumstances. A gentleman of cleanly habits, for several years resident in one of the healthiest situations of this city, was subject to psoriasis palmaria for many years previously to his coming there. This I mention to show that the disease did not originate in any thing connected with the house or its locality. In the course of the last year I was called to see his butler, who had contracted an extensive psoriasis on the back of his hand, and which he himself attributed to his wearing his masters old

gloves. This fact did not make much impression on my mind until about two months afterwards, when I found that the house-maid in the same family had also contracted the disease, in the form of scaly spots of various sizes on the forearms. This she attributed to contact with her masters linen, making his bed, &c. The house-maid and butler, it is necessary to mention, were not relations.

The most extensive case of psoriasis diffusa I ever saw, occurred in a boy after sleeping many nights without a shirt, on the wool termed *pitch-marks*, the wool of the sheep in which the owner's initials had been stamped with pitch, and bought by the poor for various purposes, such as stuffing cushions, &c.—In this case I am doubtful whether to attribute the complaint to the irritating qualities of such wool, or to its being, perhaps, in part taken from sheep labouring under disease of the skin. That cutaneous diseases may be communicated by other animals to man is well known. I myself have seen two instances, in which an entire family of children were infected with a disease resembling the itch, from playing with a mangy dog.

SWELLING OF THE EXTREMITIES.

Of these, but two species have been acknowledged by nosologists, viz. *plegmatia dolens* and *elephantiasis* or *bucnemia tropica* of Dr. Good.—



I have observed two sorts of tumefactions, which are pathologically different from either of the above species, and occasionally produce a monstrous degree of deformity.

1st Species.—Of this I have seen but one case, and but two similar cases are I believe on record. One of them is related by Chevalier, in the *Medico-chirurgical Transactions of London*, Vol. II. p. 68,—and the other by Sömmering, Jun.*—In Chevalier's patient the origin of the disease seemed connected with a previous attack of phlegmatia dolens. My patient was a young man of 25 years of age, and otherwise healthy. He was admitted into the Meath Hospital on account of an extraordinary enlargement of the left lower extremity. The limb (*see plate iv.*) measured round the thickest part below the knee, was two feet nine inches in circumference, or about the same size as his body. The swelling felt firm to the touch, and extended nearly half way up the thigh, where it rapidly diminished, and at this part the integuments felt loose and flabby.

The upper part of the thigh was not increased in size. On the foot the swelling was exactly similar to that described by Chevalier, and overhung the toes, “*so that all except the great toe were embedded in it.*”

* Sömmering's Paper I have not yet seen; I cannot therefore speak positively concerning the nature of the tumefaction he describes.

Some parts of the skin, particularly in front of the tibia and on the instep, were covered with hard concretions, arising from an occasional oozing of fluid from slight fissures, which fluid afterwards dried and formed a sort of scab, and being mixed with the furfuraceous scales of the thickened and desquamating cuticle,—these scales might have been confounded with true tubercles: except in these parts the cuticle did not appear very rugged, or much thicker than natural.*

Towards the bottom of the deep fissures which divided the swelling into lobes, the cuticle was very thin, and the skin reddish, and constantly moistened with a fluid secretion. The swelling had commenced many years before his admission into the hospital, and had attained its enormous size gradually, and without the least pain or inflammation of the skin, the subjacent adipose tissue, or of the inguinal glands. Both the knee and ankle joints retained their flexibility; he could walk and run, and until an extensive excoriation took place on the back of the leg, the disease had not prevented him from earning his bread by his daily labour.†

* It was, however, more deeply divided in every part by the cuticular lines, which formed likewise much larger and more prominent lozenge like divisions on its surface, than usual.

† To this was owing the division of the tumor into lobes; for the joints being kept constantly in motion, diminished its growth in certain parts, and accordingly the fissures were formed so as to suit the motions of the joints.

His virility was unimpaired. Great quantities of fluid were discharged from the excoriated surface of the skin, and rendered the neighbouring parts tender and sodden. The toe nails were natural, and there was no tumefaction of any of the toes; their skin was also natural. The bottom of the swelling formed with the sole of the foot, a continuous flat surface, fully six inches in breadth, and covered with a thickened, but not diseased skin—so that he could support the weight of his body on that leg, steadily without pain.

From the perfect manner in which the muscles of this limb performed their proper motions, it is extremely probable that in this, as in Chevalier's case, "they preserved their natural relative situations with respect to the bone and to each other, the disease not having at all extended into the interstices between them." I have no doubt also, that, as in Chevalier's case, the tumefaction arose from an extraordinary growth of the skin and subjacent adipose tissue.

The formation of sarcomatous and other solid tumours, seems often totally independent of inflammation; to what it is really owing we are ignorant,—but the process may with propriety be termed a morbid growth:—to a similar growth we must refer the cause of the tumefaction just described.

It is therefore entirely different in its nature

from either phlegmatia dolens or Barbadoes leg, both of which arise from inflammation.*

The *second species* of enlargement I have observed, may occur in either the superior or inferior extremities. It is perhaps more frequent in the former, and often obtains such a magnitude as to render the limb useless for the purposes of manual labour.

I have never seen it except among the poor, but among them frequently. I am told it has been often observed in Charter-schools, and my friend Mr. Evanson, whose attention I directed to the subject, informs me “that the disease prevails
“very generally in a particular spot or place,
“many in the same neighbourhood being affected,
“and sometimes many in the same family.”

Since I directed the attention of the profession in Ireland to the disease, I have received many communications which shew that it is by no means unfrequent throughout the whole island.

The first appearance of swelling is preceded in

* In Chevalier's case, when he saw the patient, he says “the
“whole surface of the limb continually discharged a serous fluid,
“and was inflamed and tender.” But this was in the *very last stage of the complaint*, and no such inflammation seems from the account given, to have existed originally.—The superficial inflammation in both these cases arose probably from the morbid state of the limb, when the swelling had attained a great size; but in neither did the swelling arise from inflammation.

general by febrile symptoms, more or less severe, and usually attended with marked gastric derangement. In a day or two the back of the hand and wrist, (if it be an upper extremity which is attacked,) become somewhat swollen and considerably hotter than natural. The skin becomes red in irregularly circumscribed, confluent and slightly elevated patches. In some, the outlines of the patches are very distinct, in others, the redness is more diffused and has an erysipelatous appearance; in all, it disappears on pressure, and is attended with heat, itching or slight pain. Vesications are never formed, and I have heard of but one instance in which suppuration took place. After a period varying from three to eight days, the heat and redness subside, and the patient retains his usual state of health; the first attack leaves no permanent inconvenience, for the slight oedema it causes soon vanishes. The complaint however usually re-appears in the course of four or five weeks, and runs precisely the same course, except that the oedema remains longer; and when the disease has recurred five or six times, the oedema becomes permanent, being augmented by each attack, and decreasing during the intervals. In general the constitutional symptoms decrease in violence as the local disease becomes more marked, and I have even seen cases where the local exacerbations recurred without any perceptible disturbance of the system. In the course of a year or more, the hand is swollen to two or three times its natural size, the increase of bulk

taking place chiefly on its back. Finally, the skin becomes thickened and corrugated, particularly about the wrists and in the advanced stages of the disease, rhagades and painful fissures are occasionally formed during the exacerbations. The wrist too and forearm are much increased in size, the hand cannot be closed, and therefore is nearly useless. When the leg is attacked, the swelling proceeds more rapidly, and attains a very great degree of magnitude, as the tumefaction finally spreads over the whole limb. The distention of the integuments and the recurrence of the periodical inflammation, at last produce a permanent superficial rawness and soreness of the leg, and in this state fissures take place.

Much fluids ooze out, and scabs are formed. I have several times seen such cases in the Meath Hospital, and have always heard them called elephantiasis ; a proper name, if taken from the size of the limb, and not meant to convey the idea of elephant or tuberculated skin, which, as will be just now shewn, is a species of leprosy, and of course a totally different disease.

It may be observed here that this mistake is confirmed by the state of the integuments in elephantiasis, and the disease I have described, for after either of these complaints has continued for some time, the skin becomes in many places thickened, very rough, and the epidermis rugous and hard, so that on the whole a person not accurately acquainted with the subject may take it

for a case of elephant skin and elephant leg, or *elephantiasis in both senses of the term.*

I have had an opportunity, through the kindness of Mr. Houston, of examining several preparations in the Museum of the College of Surgeons shewing the change in structure induced by the disease I have described. They were all marked "elephantiasis." The cuticle in all was in many parts thickened, scaly and rugous, and here and there had the appearance of a hard warty surface. The corium was thickened in some parts enormously, even to the extent of three quarters of an inch; the papillæ were enlarged, vascular and elongated, and the sub-cutaneous cellular membrane was much encreased in depth and condensed in structure, containing a large quantity of granular fat like matter.

The muscles were slender but otherwise natural, so that the increased size of the limb evidently arose from the alterations which had taken place in the skin and sub-cutaneous cellular tissue, in consequence of the frequent depositions and increase of substance in these parts after each accession of the inflammation.

In Haller's *Disputationes Chirurgicæ*, will be found a case of this disease which had produced a most prodigious tumefaction of the arm.*—The description of the progress of

* *Vide* vol. v. p. 463.

the disease is, "Haud multo post, tumor
 " brachii sequebatur, quem ægra, pro erysipelate
 " sibi alias consueto, habuit, imprimis quoniam
 " post aliquot dies, levis inflammatio prægressa
 " rursus evanuit.—Idem malum, *per aliquot*
 " *annos sæpius revertens* experta est, donec tandem
 " tumor in hanc magnitudinem successive ac-
 " crevit."

Henseller, who relates this case, gives also another, but a slighter one, p. 469, of the same complaint. He seems to have considered it as a consequence of a badly cured erysipelas, and accounts for its origin according to the doctrines of the humoral pathology.

I have given a coloured drawing, (see plate v.) representing the hand of a girl, treated in the Meath Hospital, and in whom the complaint had lasted about one year.* Mr. Evanson who was good enough to enquire concerning the frequency of this complaint in a Southern county of Ireland, reports, "that it is by no means rare, and that
 " men, women and children are all subject to its
 " attacks; some have laboured under it from in-
 " fancy to extreme old age. They generally
 " describe it as some illness falling into their

* This plate is given in order to represent of the cutaneous inflammation during the paroxysm. The case was not one in which the hand had arrived at a very great degree of size, it must not be understood therefore as intended to convey an idea of the magnitude of the disease.

late V

“ hands or feet. Fatigue or labour induce paroxysms, and the disease seems most violent in the spring and autumn.”

Mr. Evanson saw one case when the disease had lasted upwards of twenty years, and the wrist was at least twice its natural size.

Although the accompanying fever is often attended with gastric symptoms, yet I have seen cases where no such symptoms existed. This, together with the occurrence of the complaint in habits apparently the most healthy, and in persons quite free during the intermission from the slightest symptom of dyspepsia, must lead us to look elsewhere than to the state of the stomach and bowels for the cause of this disease.*

The first fact worthy of notice is, that in all recent cases the fever appears before the local inflammation; the former therefore is probably the cause of the latter. The intermitting nature of this fever, its greater frequency in some parts of the country than in others, its prevalence chiefly in spring and autumn, all suggest the idea that the febrile complaint may partake somewhat of an aguish nature.† I shall not however insist

* All treatment directed merely to remove the supposed gastric origin of the complaint has proved ineffectual.

† Or that its obstinate tendency to recur may depend on a state of the system, not very dissimilar from that which occasions other periodical complaints.

upon this point ; but merely state what my experience suggests concerning the treatment of this complaint. When the case is not of very long standing, considerable advantage may be derived from the following plan ;—during the febrile paroxysms, antiphlogistic treatment and purgatives ; application of leeches repeatedly to the inflamed parts, cold lotions, lead washes, &c.

During the intermissions, rest of the affected extremity, bandages moderately tight ; bark, and if it fails, arsenic. Much benefit was derived from Fowler's arsenical solution, in one case ; change of air should be always recommended, and the *antiphlogistic plan at once resumed the moment the inflammatory paroxysms recur*. This is the chief point to be attended to in the treatment, for by moderating the local inflammation during the paroxysm, the subsequent œdema will be proportionally diminished. In such cases I have known much injury caused by the application of adhesive straps ; pressure, it is true, can be thus conveniently made on the swollen extremity, but the irritation produced by the plaister invariably aggravates the inflammation.

Whatever plan be determined on must be diligently persisted in, for the disease is of a most obstinate character. Recent cases may however be checked in their progress.

If we can rely upon the generally received pathology of elephant leg, (Barbadoes-leg,) the complaint I have described must be looked on as constituting a different species, as it does not, like the former, commence with pain and inflammation of the glands. I must however be permitted to doubt the truth of the opinion, that the swelling in Barbadoes-leg is a consequence of inflammation of the inguinal glands.

The inflammation and swelling of the whole leg take place so shortly after the inflammation of the lymphatics, that we may very well suppose that in both the inflammation arises from one common cause. This view of the subject seems to me nearly established by the admission of Hillary (London 1759, p. 313.) “ That although
“ the morbid matter does most commonly fall into
“ these inguinal glands, and so into the one leg
“ or other, I have known it sometimes fall into
“ the arm each time it came, and I once saw a
“ patient, where this morbid matter was cast upon
“ the scalp, the ears, and the back part of the
“ neck ; and another, wherein the matter was
“ cast upon the lower part of the spina dorsi, the os
“ coccygis and the loins, at each time of the return
“ of the fever.”—It is obvious, that in such parts the swelling could not have arisen merely from glandular inflammation ; and as we have seen that inflammation of the skin, and subjacent cellular tissue, is in itself capable of producing a swelling in all other respects similar to that of

Barbadoes leg, I am inclined to think that a more accurate investigation of the subject will induce Dr. Good to modify the opinion he expresses on this subject. “The tropical bucnemia is occasioned by an effusion of coagulable lymph, into the cellular membrane under the skin, in consequence of inflammation of the lymphatics of the lower limb, and especially of the inguinal glands.”

Be this, as it may, the Barbadoes leg presents many striking points of similarity to the disease I have described.

For an account of Barbadoes leg, see Hillary on the Diseases of Barbadoes, and Dr. Good’s Study of Medicine (*bucnemia tropica*).—The student ought to bear in mind the following observation of Dr. Good:

“Many writers of the present day continue to jumble the *elephantiasis*, or the *elephant leg* of the Arabians, with the *elephantiasis* or *elephant skin* of the Greeks, and to describe them as a common affection, though no two complaints can be more unlike; the former being a mere local malady, confined to the individual, and the latter a constitutional disease, in every quarter hereditary, and in most quarters contagious.”—I refer to this, because I have seen many respectable practitioners commit this error, and misled by the name of *lepra tuberculata* (ele-

phantiasis of the Greeks) look for tubercles as a diagnostic mark between the Barbadoes-leg and the elephant-leg. Chevalier (l. c.) has fallen into this error, when he says,—“ In cases of Barbadoes leg the cuticle is not much increased in thickness, it has not the dry, horny, or lineated appearance observed in the skin of the elephant, &c.”

“ Moreover, the horny state of the cuticle, and the *exquisite sensibility of the diseased papillæ*, would render it impossible for the patient to walk about in the advanced stages of the elephantiasis.”

Now Barbadoes-leg and elephant-leg are one and the same disease. And in all cases of Barbadoes-leg the cuticle becomes rough and rugged in the advanced stages of the complaint; and during the inflammatory attacks, the hardened cuticle must cause considerable pain when pressed on the tender parts beneath; but still this affection of the skin is only secondary, and is very different from elephant-skin.

The same may be observed concerning the disease I have described.

In fact Mr. Chevalier has committed a double error, *for* he not only supposes elephant skin necessary to elephant-leg, *but* says “that a disease affecting the face, which produces ulceration and some times destroys the *alæ nasi*, has also been called

“elephantiasis, but very incorrectly.” Thus shewing that he was not acquainted with the disease called by the Greeks elephantiasis, or elephant skin, for that is the disease which affects the face in the manner Mr. Chevalier describes.—In support of his *diagnostic* marks, he has brought forward the enlarged papillæ and horny cuticle of what he calls elephantiasis ;—but his own description proves, that he has mistaken the enlargement of the papillæ and the roughness of the cuticle, which occur in all cases where the increase in the size of the limb proceeds from increase of thickness in the skin and subsequent cellular membrane, with the ulcerating tubercles of elephant skin, *lepra tuberculata*.—(Compare Chevalier’s paper with Dr. Good’s description of elephant skin; see also Bateman and Sprengel on the latter disease.)

A
SELECTION OF CASES
FROM THE
MEDICAL WARDS
OF THE
MEATH HOSPITAL
AND
COUNTY OF DUBLIN INFIRMARY.
BY R. J. GRAVES, M. D.
AND
WILLIAM STOKES, M. D.
PHYSICIANS TO THAT INSTITUTION.

OUR principal object being to prove the utility of the stethoscope in the diagnosis and treatment of thoracic diseases, we shall commence with cases in which that instrument was applied.

James Connor, ætat. 33 years, a servant.—September 13, 1825, was admitted into the hospital, labouring under dysentery of about a month's standing; his stools were bloody, and he had tenesmus and prolapsus ani. For this affection he was treated with calomel and opium, and in the course of a week was salivated with some

relief. The disease continuing, small doses of turpentine were ordered, with the best effects. The dysenteric symptoms completely disappeared; but early in October his lower extremities began to swell. The anasarca was removed by small doses of colchicum, and he appeared in a fair way of recovery until the 13th of this month, when he suffered much from orthopnoea during the night, and stated that for the last three nights he had no expectoration.—These symptoms were sufficient to excite a suspicion of pneumonia, but the diagnosis was rendered somewhat doubtful by their occurrence so immediately after the disappearance of the external dropsical swellings in a debilitated constitution, for many of his pectoral symptoms might have been accounted for on the supposition of hydrothorax. The diagnosis between pneumonia and hydrothorax was evidently of great practical importance. It was at once afforded by an examination with the stethoscope. It was observed that he lay on the left side. Here the crepitating rale was heard above the left mamma. The respiratory murmur beneath inaudible. Pulse 105. *Diagnosis. Inflammation of the lower part of the left lung.*

Fiat. venesect ad 3xiv.

14th. The most beneficial effects have followed the bleeding. Orthopnoea cough and pain of side have disappeared; he slept well, and the pulse has fallen to 95. Respiration tranquil: the respiratory murmur is now audible under the left

mamma, but is weaker than natural; the crepitus has entirely disappeared.

He had a slight return of dyspnœa in the course of a few days which was relieved by a blister under the left mamma. He continued to improve till the 20th, when he exposed himself to cold, and had a return of dyspnœa, orthopnœa and dry cough: pulse 100, full and strong. The sound on percussion in the infero-posterior part of the right lung is duller than natural, and in this situation a pretty evident crepitus is heard.

On the 28th he was so much better as to be pronounced convalescent, but on the night of the 29th he was seized with sudden dyspnœa, with much heaving of the chest, hard and frequent cough without expectoration, and he lay on the left side; pulse 108, full and strong.

AUSCULTATION.

Respiratory murmur indistinct below left mamma, crepitating rale under left scapula.

He was blistered, but the symptoms continuing another bleeding was ordered, from which he experienced much relief. The crepitus disappeared, and the cough and dyspnœa were removed.

3rd of Nov. Again attacked by constant hard cough; percussion over the inferior part of left lung gives a dull sound, and here the crepitus is again heard. The impulse of the heart is much

stronger than natural, and the sound is heard over the whole of the right side.

The sound of the right ventricle is much clearer than that of the left, which is dull and prolonged. The auricles give a clear sound, there is no indication of disease in the valves.

From this examination it was conjectured that active aneurism of the right ventricle existed ; but as there was no sign of disease of the valves, it was difficult to determine whether the increased action of the heart arose from actual disease of that organ, or from the obstruction then existing in the lungs.

The respiratory murmur gradually diminished over the anterior part of the lungs, especially under the left mamma, where at length it totally disappeared. From this time no accurate examination was made with the stethoscope, and the effusion, which soon took place into the cavity of the chest, was not pointed out.

He died on the 17th of December.

DISSECTION.

Much serum in the cavities of the thorax. The lower lobes of the right lung are hepatized, soft and of a red colour ; the superior lobe is inflamed in the first degree. The lower lobe of the left

lung, especially in the point corresponding to the left mamma, is exceedingly solid and of a very dark grey colour.

Active aneurism of the right ventricle ; the left is greatly thickened without alteration of its capacity. No disease of the valves, but there is a considerable thickening of the aorta, forming a semi-cartilaginous ring immediately above its origin, and causing a diminution of its calibre. The lining membrane of the aorta is much thickened, and apparently tuberculated. This appearance extends for several inches, and is caused by smaller depositions of cartilaginous matter.

Notwithstanding the fatal termination of this case, it is still in the highest degree instructive, as it proves the falsity of the opinion too commonly entertained, that the stethoscope is of no practical utility. Who can doubt but that the life of this patient was prolonged by its use ? he was attacked with all the symptoms of hydrothorax, but the cylinder shewed that his complaint was pneumonia, which would have speedily cut him off had it not been checked by the lancet. The disease recurred *four times* in the course of two months, and at length carried off the patient. Its situation, its intensity and the effect of remedies upon it, were in every instance pointed out by the stethoscope with the utmost accuracy, as was proved by the *sectio-cadaveris*.

With respect to the heart, the diagnosis was not so certain; the cylinder plainly indicated active aneurism of the right ventricle, but it was possible that these symptoms might have been caused by the pulmonary obstruction, especially as we could detect no valvular disease. The uniformly quick and strong pulse made us suspect that the left ventricle was in a state of hypertrophia, and this conjecture was verified by the dissection. The only omission was the hydrothorax, and this arose from our unwillingness to torment the unfortunate sufferer by repeated examinations: on this account no observation was made for the last two days, during which time the effusion took place.

The state of the aorta would appear to shew the ultimate cause of all the symptoms. From a morbid process, its calibre had become diminished, this obstruction to the flow of blood produced the hypertrophia of the left ventricle, which was followed by the active aneurism of the right, caused by the pulmonary congestion. This state of things rendered the lungs peculiarly liable to inflammatory attacks, which so often repeated in a constitution previously worn out by dysentery and its consequent anasarca, at length carried off the patient.

PHTHISIS.

Anne Kelly, *ætat.* 27, a servant, was admitted early in November 1825, labouring under all the symptoms of phthisis. Her expectoration was

copious, and consisted of a transparent mucus, in which broken up masses of an albuminous looking substance, mixed with puriform striæ, were seen floating. She constantly lay on the right side. Complaints of five months standing.

AUSCULTATION.

On the right side, about two inches below the clavicle, the voice appears to issue from the stethoscope in the most distinct manner; and is perfectly articulate, and the last letter of the concluding word is very distinct. In other words there is true pectoriloquism. At this spot the respiration is distinctly cavernous, giving the idea of air entering a cavity in the pulmonary tissue. At the antero-inferior part of the left lung there is bronchial respiration of the most evident kind; the sound is sharp, and the air appears to be drawn in through the stethoscope. Crepitating rale over the remaining portion of this lung. The sound of the heart is heard in its superior portion.

DIAGNOSIS.

A tubercular excavation in the middle lobe of the right lung, solidification of the superior part of the left lung. Inflammation in the first degree of its remaining portion.

On the 9th of November the bronchial respiration and crepitus had disappeared.

DIAGNOSIS.

The left lung has become solid. At this time she took small doses of the hydrocyanic acid, which had the effect of checking the sweating, but produced nocturnal diarrhoea and pain in the stomach*

On the 15th the bronchial respiration was again heard, each inspiration was accompanied by a tinkling sound similar to that produced by the falling of a pin into a cup of glass. The *Tintement Metallique* of Laennec. There was also cavernous respiration.

DIAGNOSIS.

An extensive tuberculous excavation in the superior part of the left lung. She lingered until the 27th of December, when death terminated her sufferings.

DISSECTION.

The lungs were universally adherent to the cavity of the chest. In the inferior part of the middle lobe, on the right side, we found an excavation with firm parietes, and about the size of a large walnut. The superior lobe was found also excavated in a more irregular manner. The re-

* There is another case of phthisis at present in the hospital where the prussic acid produced violent pain in the stomach.

mainder of the lung was studded with tubercles ;— the lower lobe had much fewer of them, was still crepitating, but appeared engorged with a frothy and sanguinolent mucus.

The left lung appeared completely solid, but on cutting into its substance, an extensive tuberculous excavation was found capable of containing two oranges. This communicated with many other smaller ones by winding canals ; and in the inferior portion of the lung another excavation of great size was found.

This case is highly interesting, from the circumstance of our having traced by means of the stethoscope the entire train of pathological phenomena. When the patient first presented herself at the hospital, the distinct pectoriloquism above the right mamma, proved the existence of a moderately sized cavity with firm walls in that situation. It is to be observed, that she constantly lay on the right side, where at this period the greatest obstruction existed. The crepitating rale heard over the two lower thirds of the left lung, indicated that inflammation was going on, which had not as yet solidified that part of the lung, while the bronchial respiration shewed that the upper part had become solid. These were the grounds of the first part of the diagnosis.

As the disease advanced all sound of respiration disappeared, proving the complete solidifica-

tion of the lung, which was mentioned as the second part of the diagnosis. But this absence of respiratory murmur was soon succeeded by the metallic tinkling, arising from the formation of a suppurating cavity.

The next case is very similar to the preceding, but the disease was much slower in its progress.

Bridget Doyle, ætat. 28 years, a servant, was admitted on the 29th of September, stating that five weeks previously she had been attacked with cough and dyspnœa, accompanied by febrile symptoms. She was much relieved by bleeding, but the dyspnœa continued. She has night sweats, and lies more easily on the right side. At this time no pectoriloquism could be discovered, but early in November the voice could be heard indistinctly issuing through the cylinder, in a space about an inch below the right clavicle. The expectoration begun now to assume the tuberculous character, and we concluded that a cavity was beginning to form. Upon daily examination the gurgling sound in this situation became more and more distinct. In a few days a crepitus set in over the left lung. On the 9th of January the pectoriloquism was very distinct under the right clavicle. On the 17th the following results were obtained.

Strong pectoriloquism over the antero-superior

part of right lung ; in this situation she can often distinguish a gurgling, and the sound on percussion is clear. On the superior part of the left lung, the sound on percussion is clear ; there is evident pectoriloquism, and a loud gurgling whenever the patient coughs. Respiration cavernous, crepitus over the remaining portion of the lung, which is dull on percussion, sound of heart heard over the whole of left side.

DIAGNOSIS.

Tubercular excavations in the superior part of both lungs ; that in the left is half filled with purulent matter ; solidification, probably from tubercles, of left lung.

The diarrhœa now encreased, and the abdomen was tender on pressure, she had the metallic tinkling on the 9th of February, and died on the 15th.

DISSECTION.

Universal adhesions of the lungs, large tuberculous excavations in their superior portions. These cavities are well defined, and lined by two membranes ; the inner, soft, whitish and in irregular patches, that next the pulmonary tissue hard, cartilaginous, and with difficulty separated from the pulmonary tissue ; both lungs studded with

tubercles, especially the left. The heart small, very soft, and with a considerable portion of fat.

The mucous membrane of the colon is covered by circular ulcerations with raised edges. These are most frequent at the caput coli, which is greatly thickened, and they decrease in number as the intestine proceeds downwards: mucous lining of the stomach very pale.

In this case we found the lining membrane of the tuberculous excavations as described by Laennec.* It is to be remarked that the sound on percussion continued clear over these cavities, as owing to the adhesions of their external parietes, and to the pressure of the atmosphere, they could not collapse. This observation is of importance, for when the metallic tinkling was heard, accompanied by the clear sound on percussion, it might be supposed that pneumo-thorax had taken place; the cavernous respiration however, along with the gurgling and pectoriloquism, decides the question.

EMPHYSEMA OF THE LUNG.

Daniel Grogan ætat. 40. Came into hospital affected with cough, dyspnœa, general anasarca, and lividity of the countenance. During the night he has paroxysms of orthopnœa; expectoration free, of a yellow colour and floating together like

* "De L'Auscultation Mediate"

the white of eggs. He constantly lies on the left side, which presents nothing remarkable in form, but on the anterior part of the right there is a remarkable convexity, forming a prominence which extends from the middle of the third to that of the seventh rib. He states that he has been subject to an asthmatic cough since boyhood, and that, in the beginning of last September, he was affected with anasarca of the lower extremities, of which he was relieved by the use of supertart of potass; soon after this he caught cold, when the present symptoms came on. Pulse 110, small and unequal.

The chest sounds remarkably hollow on percussion, especially in the situation of the prominence on the right side; posteriorly the sound is not so clear. Notwithstanding the clear sound on percussion, the natural respiratory murmur is almost inaudible over the anterior part of the thorax; below the clavicles it is much weakened. A hissing rale is heard at intervals over the whole thorax, especially on the patient's making a full inspiration; posteriorly it is mixed with the sonorous rale.

Sound and impulse of the heart heard and felt over the whole of the right side; strong pulsation at the ensiform cartilage.

In consequence of these observations, the fol-

lowing diagnosis was entered on the case book of the hospital :

No hydrothorax. Emphysema of the lung. Bronchitis. Hypertrophia of the heart.

On the 15th of January all his symptoms were increased. Below the left scapula we observed the sound on percussion to have become dull, and on applying the cylinder, a strong crepitating rale was heard. The voice resounded under the stethoscope, but the words were not articulate, forming the broncophonia of Laennec. We now added to the former diagnosis,

Inflammation of the posterior part of left lung.

He was ordered to be bled to 3xii, and to take a dose of purgative medicine. The blood was buffed and cupped, and at the next visit he was found much relieved; he had got some sleep, dyspnœa and thirst diminished, and he could make a full inspiration with much greater ease. The crepitus was greatly diminished, but still audible.

On the 18th the strong impulse felt at the superior part of the right side, and corresponding to the ventricular contraction made us suspect that there might be an aneurism of the aorta; the pulsation of the carotids could hardly be felt; there was none of the rustling sound termed "Bruit de soufflet" to be heard.

21st. The crepitus has disappeared from the posterior part of the lung, where nothing is heard but the sonorous and hissing rales; as yet no hydrothorax.

27th. He is rapidly sinking from diarrhœa. The belly is swollen and fluctuating, the hissing rale can be heard over the whole chest, indicating that no effusion has taken place.

29th. Dead.

Diagnosis written down before dissection. Emphysema, particularly of the right lung; bronchitis, entire enlargement of the right side of heart, *perhaps* of the aorta. *Remains of pneumonia* in the posterior part of the left lung. Hydrothorax may have taken place immediately before death.

DISSECTION.

Upon raising the sternum the lungs did not collapse, but appeared firmly bound down by adhesions so universal, that the cavities of the pleuræ were completely obliterated, thus preventing the possibility of effusion. In both lungs the lobes were united, but this union must have been the consequence of recent inflammation, as the coagulable lymph thrown out was soft, and the interlobular pleura beautifully injected with red vessels. The adhesions between the pulmonary and costal pleuræ, on the contrary, appeared to be the consequence of a former affection, as they were ex-

ceedingly strong, and on the antero-superior part of the right lung the membranes were converted into a thick white and cartilaginous substance. The whole of the right lung was in a state of emphysema, all the air cells appearing dilated, and the pleura in many places raised into vesicles the size of a walnut; when cut into, these vesicles were found divided by membranous septa, perpendicular to the surface of the lung.* The volume of this lung was double that of the left, its bronchial tubes filled with a muco-purulent fluid, and their lining membrane of a bright red colour. The left lung was much diminished in size, the upper part covered with large vesicles, the lower of a pale colour and flabby consistence, but still presenting the dilated air cells. Upon cutting into this portion of the lung we thought the knife had entered an abscess, as a large quantity of a viscid and yellowish fluid flowed out and displayed a cavity in the pulmonary tissue, capable of containing a moderately sized apple; but on closer examination this cavity proved to be an enormously dilated bronchial tube, as it was lined by a delicate mucous membrane, continuous with that of the bronchial tubes, and beneath which traces of the cartilaginous rings, peculiar to these canals, could be observed. All the bronchial tubes on this side were thus more or less affected, so that the lung appeared to contain many small abscesses.† Posteriorly the pulmonary tissue was

* See plate vi.

† See plate vii.

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of a dark grey colour, and cartilaginous hardness, evidently the product of former inflammation.* In the immediate neighbourhood of the dilated tubes, however, it was solid, but of a red colour and soft consistence, the consequence of more recent inflammation ; the heart was more than twice its usual size, the right ventricle greatly enlarged and thickened, the left thickened without alteration of its capacity. Dilatation of the auricles. No disease of the valves. Aorta healthy.

The above case affords an excellent verification of stethoscopic diagnosis, the patient was sent into hospital to be treated for hydrothorax, of which indeed he had every external symptom ; upon using the cylinder, however, it was at once shewn that his case was of a different description. The diminished respiratory murmur, combined with the hollow sound on percussion, proved the emphysema, and shewed that no effusion had taken place. The sonorous rale pointed out the bronchitis, and the increased sound and impulse of the heart the hypertrophia. In a short time the occurrence of the crepitating rale proved that pneumonia had taken place, which was relieved for the time by a small bloodletting. We were led to suspect aneurism of the aorta, from the great impulse felt under the right clavicle and the diminished pulsation in the carotids ; but the dissection proved that this impulse arose from the

* " *L'Induration gris*" of Andral, 'Clinique Medicale tom. 11.

dilated right ventricle, as no disease was found in the aorta. The only lesion overlooked was the dilatation of the bronchial tubes, but this omission in the diagnosis was probably unavoidable, owing to the bronchial tubes being full of muco-purulent matter, preventing the phenomenon of pectoriloquism, which would otherwise have taken place.

With reference to this and the first case, we may observe, that no practical error is of more frequent occurrence than the attributing to hydrothorax, symptoms which depend upon pneumonia. This error occurs repeatedly in Maclean on Hydrothorax, many of the cases he relates in the Appendix being evidently cases of pneumonia. Thus in case 35, (Appendix) we find the most unequivocal symptoms of frequently recurring attacks of pneumonia during life, and the post mortem examination exposes hepatization of the lungs of various degrees, and great extent, evidently the consequence of repeated pneumonia; notwithstanding which the case is related as affording an instructive example of hydrothorax! And why? Because, forsooth, the left cavity of the thorax contained more than a pint and a quarter of a yellowish fluid. This is in truth to mistake the consequence for the cause.

Case XIX. (Appendix p. 33) is likewise a case of pneumonia, treated as simple hydrothorax; we need not therefore wonder at its rapid and

fatal termination, "although the habit was placed
"under the full influence of digitalis."

We wish to call the attention of the profession to this subject, because, with a few exceptions, the great mass of practitioners still adhere to the Cullenian definition of hydrothorax, in apparent ignorance of its overthrow by Corvisart and Laennec.

In proof of this assertion we may state, that numerous cases have been sent into the medical wards of the Meath Hospital, by practitioners who had named and treated them as cases of simple hydrothorax; but in no instance have we found this diagnosis correct, and more than once have we succeeded in saving the life of such a patient, by the bold use of the lancet, at a period of the disease when a reliance on antidropsical remedies alone would have been of no avail.

Numerous dissections made during the last five years in the Meath Hospital have convinced us, that although many die *with* hydrothorax, few can be said to die *of* it; at least we have not as yet met with a case of hydrothorax unaccompanied by evident marks of lesions, either in the heart or lungs, of a date previous to the occurrence of effusion into the cavity of the chest.

In the dissection of such cases, the presence of so much fluid in the chest was formerly thought

quite sufficient to account for all the symptoms, so that when water was found, the thoracic viscera were examined either very superficially, or not at all; and consequently the real root of the evil was, in most instances, overlooked. The false pathological opinions which sprung from this error, appeared the more plausible, because the supposed gradual accumulation of water in the chest from the very commencement of such a disease, seemed quite adequate to produce that derangement in the function of respiration and circulation, which we know depends on quite another cause, viz. disease of the lungs or heart. In the last edition of Dr. Good's Study of Medicine, Vol. V. p. 404, we find the following definition of *Hydrops Thoracis* :

“ Sense of oppression in the chest : dyspnoea
“ in exercise or decumbiture : livid countenance :
“ urine red and spare : pulse irregular : œdemat-
“ ous extremities : palpitations and startings
“ during sleep.”

Now we have no hesitation in affirming, that were we to meet with a case answering to this definition in *every particular*, we would at once declare the disease *not to be* hydrothorax; for in every such case, a careful examination of the chest by means of percussion and the stethoscope, will detect diseases in the thoracic viscera of prior occurrence to the effusion, *when effusion really exists*; and in many cases, when several of the

above enumerated symptoms occur, they will be found on examination to commence long before effusion into the chest has taken place.

On the whole, we feel convinced that the opinions advanced by Corvisart and Laennec, concerning the extremely rare occurrence of idiopathic hydrothorax, are correct ; and we cannot therefore subscribe to the reasons assigned by Dr. Good, for still retaining the old definition of that complaint, a definition completely at variance with our dissections.

REPORT
OF AN
INQUIRY
INTO THE
VALUE OF MEDIATE AUSCULTATION,
AS A
METHOD OF DIAGNOSIS
IN
INFLAMMATIONS
OF THE
PLEURA, LUNGS, AND BRONCHIA.
BY WILLIAM STACK, M. D.
PHYSICIAN IN ORDINARY TO SIR P. DUN'S HOSPITAL,
&c. &c.

THE adoption of mediate auscultation has removed many of the difficulties attendant on the diagnosis of affections of the thoracic viscera. Of all the methods of exploration of the chest used previous to its discovery, percussion was the only one which afforded any thing like a satisfactory result, but there are two grand objections to it ; first, the disease must have made considerable progress before any appreciable sign can be

deduced by its means ; and secondly, the indications it affords are common to more than one disease, so that it is impossible by it alone to discover which of these is the actual affection. Nevertheless, although of itself imperfect, it affords the most valuable aid in practising mediate auscultation, the employment of which is not by any means to supersede the use of the former, for it happens by a very singular coincidence that the defects of the one method are in most instances accurately supplied by the other, so that from a combination of both a degree of certainty, as to the nature of thoracic disease, can be attained, such as is not to be had with respect to affections of any other cavity.

But although few persons more fully acknowledge the utility of the combined methods of diagnosis, percussion and auscultation, I am yet far from asserting that by means of them it is in all cases possible to distinguish between inflammations of the mucous, serous, and parenchymatic structures of the thoracic viscera. I admit that in case of acute inflammation of these parts, it is easy enough to form the diagnosis, provided the practitioner has an opportunity of observing the disease soon after its formation ; but the case is widely different when we are called on to pronounce a diagnosis in a disease of somewhat protracted standing, the commencement of which we have not had an opportunity of observing, and we shall here too often find ourselves destitute of

any tolerably certain signs ; for example, suppose (what not unfrequently occurs) that a patient presents himself complaining of dyspnoea, which has lasted for several days, having been preceded by a pain in some part of the chest. On percussion one side returns a dull sound, but does not appear either dilated or contracted. On examination with the stethoscope, the respiratory murmur is absent all over that side of the chest, with the exception perhaps of those parts where the root of the lungs is situated, and a few inches down the spine. There is no bronchophony excepting in the superior parts, nor is œgophony distinguishable. What diagnosis is to be deduced from this combination of signs? whether is the disease pneumonia or pleuritis? I say it is impossible to determine, even supposing the minor signs to be present, such for example as the communication of the heart's action over the affected side, which some will have to be a sign of the advanced stage of pneumonia, but which may also depend on other causes, such as dilatation with hypertrophia of the heart. The disease may be either acute pneumonia or acute pleuritis, or it may be chronic pneumonia or chronic pleuritis.

It is true that the nature of the sputa may afford us assistance in this case, but it must always be remembered that the appearance of the expectoration is more variable in chronic than in acute inflammations ; and that both in chronic pneumonia, and chronic pleuritis, it very frequently

assumes the form of the expectoration of catarrh. The following case serves as an illustration.

Loughlin Craven, admitted into Sir Patrick Dun's Hospital, May 13, 1826, had been seized fourteen days ago with a sense of oppression and tightness in the left side of the thorax. For some days previously he had a slight pain in the left side, which however did not impede his inspiration : at that time he could lie with perfect ease on either side, but from the commencement of the period of precordial oppression, he was unable, during four or five days, to rest on the affected side (the left) after which he began to lie with greater ease on the affected than on the sound side, so that he always assumed that position when preparing for sleep, although he was and is at present able to lie for a short time on the right side for the purpose of resting himself whilst waking. He was blooded at the commencement, and had little or no expectoration, which is at present not very abundant, and is of a catarrhal nature. Exploration of the chest gave the following result: no dilatation or contraction of the affected side; dull sound on percussion over the entire of that side; no respiratory sound whatever on the anterior part, except just at the junction of the clavicle with the sternum when there was bronchial respiration; no ægophony, no bronchophony. On the posterior part there was an indistinct respiratory murmur down the spine to the eighth rib. The alteration of the position of the patient produced no change in the results obtained. On the 17th, the respi-

ratory murmur was faintly audible on the anterior of the thorax, on a level with and below the apex of the heart; no ægophony; the sound on percussion less dull than at the superior parts. On the 20th the auscultatory signs were the same as on the 17th, but the expectoration had been presenting various appearances since his admission; sometimes it was liquid, transparent, ropy, and covered with a frothy surface; sometimes more dense, opaque, and inclining to a greenish cast; occasionally (as on this day) approximating to the rusty colour of pneumonic sputa. 21st, Bronchophonia in several places down the spine, along the clavicle and spine of scapula, and those places where it is generally audible in health. The sound however not so remarkable as at the healthy side; he now lies on either side, or on his back, with perfect ease. In a few days he left the house, having no complaint and the respiratory murmur becoming daily more distinct.

This case was treated as a case of pleuritis, effusion having taken place before his admission. But in forming my opinion as to its nature, I was guided rather by other indications than by those derivable from auscultation and percussion; for it appeared to me that the signs were equally indicative either of pneumonia or pleuritis. One of them indeed seemed rather to point out the disease as pneumonia, I mean the return of the respiratory sound, as well as of the natural sound on percussion at the *inferior* part, which was alike observable in the erect as in the

recumbent posture, while the superior part manifested no such improvement. From this it seemed probable that the cessation of the respiratory murmur arose from an alteration in the substance of the lung itself, because if it had arisen from liquid in the pleura, the return of the natural sounds ought to have been sooner perceived at the superior than at the inferior part, as in the case of the liquid being diminished by absorption, the remaining portion of it ought, in the erect position, to have assumed its place at the inferior part of the thorax, and so long as any of it remained it ought to have rendered the sound on percussion more dull, and the respiration less audible than at the superior part. On the other hand it was possible to account for this apparent anomaly, even on the supposition that the cessation of respiration arose from pleuritic effusion, viz. absorption taking place, and nothing having occurred during the progress of the inflammation to obstruct the expansion of the lung, when the liquid was removed from the pleura, the pulmonary and costal pleurae coming into contact, adhesion might have taken place, and so the respiratory sound might have been transmitted through the parietes.* That this was the case I concluded from the absence of the crepi-

* The formation of the close adhesion at the lower part is easily accounted for on the supposition, that the position of the patient was such when the diminution of the liquid in the pleura began to take place, as to permit the lower point of the lung sooner to come into contact with the pleura costalis than the higher, where the mass of effused fluid was more dense.

tous rale which ought to have been present, had the return of the natural sounds been caused by the resolution of pneumonia. I have not taken into account the possibility of the disease as above hypothetically stated, (page 92,) turning out to be a case of bronchitis, because it very rarely happens that in this disease the chest returns a dull sound on percussion ; indeed it is assumed that it *never* does return a dull sound ; but this is too general a conclusion, because there is a stage of a particular modification of bronchitis in which the sound is very nearly as dull as in hepatization. This assertion I am aware is contrary to the received opinion, but nevertheless I feel quite certain it is correct, for I have repeatedly observed the fact ; and it is also worthy of notice that in those cases the action of the heart is propagated over the affected side of the chest quite as distinctly as in the case of hepatization of the lung. My attention was first drawn to this point by a case which occurred in Sir Patrick Dun's Hospital about two years ago ; the patient was a young woman, who was admitted (almost *in articulo*) from acute humid bronchitis. Some very intelligent pupils, who were occupied in practising the new method of exploration, concluded from the absence of respiratory murmur, the propagation of the heart's action through the entire of the thorax, and the dull sound returned on percussion, that it was a case of pneumonia occupying both sides of the chest. There was no expectoration. I found this report as to the signs deduced from

auscultation and percussion to be correct ; yet on observing the colour of the countenance I felt quite convinced that the disease was acute humid bronchitis, and not pneumonia ; and I endeavoured to account for the phenomena in the following manner. The inflammation having been very acute and rapid, a considerable secretion of mucus took place, so as almost completely to obstruct inspiration, and to produce a state closely approximating to asphyxia, at the same time by the pouring out of this fluid into the various ramifications of the bronchiæ, and also into the cells, the air which in the state of health is retained in the lungs, was gradually expelled, and its place occupied by the dense secreted fluid, and therefore the clear sound on percussion peculiar to bronchitis ceased to be returned, the lung being rendered much less resonant than in the natural state : the same cause accounted for the transmission of the heart's action over the chest, for the density of the part being increased, the impulse produced by the heart was more readily communicated. On examination of the lungs the air passages were found perfectly charged with viscid fluid, the bronchial membrane exhibiting the other signs of inflammation, but there was not the slightest trace whatever of inflammation of the pulmonary tissue. It may appear strange that in a case which was new to me, I should have founded my diagnosis on the colour of the countenance rather than on the signs deduced from auscultation and percussion, particularly as

they corroborated each other, which is indeed the case of all others in which we may venture to rely on their results. In explanation of this I have to observe, that in inflammatory affections of the thoracic viscera, there is no symptom on which, as a diagnostic sign, more reliance may be safely placed than the colour of the countenance.

Each of the three inflammations, I speak of the acute forms, pleuritis, pneumonia and bronchitis, possesses, when the disease is at all severe, the characteristic of a peculiar colour of the countenance. In pleuritis it is either of a flushed and florid, or of a natural hue. In humid* bronchitis it is of a colour more or less approaching to a blue, according to the severity and extent of the inflammation. In pleuritis the lips are of a florid red; in humid bronchitis they are of a blue colour; the flush of pneumonia is altogether different from either; it is, as it were, made up by an intermixture of the two shades, but quite distinct from each; it is also less remarkable in particular isolated parts than the colour arising from humid bronchitis and pleuritis; in both these the cheeks are often flushed in a circumscribed manner, the lips are always remarkably coloured; but in pneumonia the lips and cheeks are scarcely more suffused than the adjacent parts, and the

* I use the term humid for the purpose of showing that these observations apply to that form of bronchitis, (which is by far the most frequent) in which an increased secretion takes place from the mucous membrane.

flush, though sometimes circumscribed, appears more generally diffused. It seems to me not very difficult to account for this variety of colour in these different diseases; in acute bronchitis, especially where it prevails epidemically, the affection is commonly of a generally diffused nature, and extends over a considerable portion of the lungs (at least in this country, although from the clinical records in other places the contrary seems to be case;) the nature of the morbid change is such as to afford a very considerable obstruction to the transformation of the venous into arterial blood; the consequence is, that blood very little differing from venous is circulating in the arterial system; this easily accounts for the bluish cast of the countenance. In pneumonia the affection is not in general, so universal, and in but comparatively few instances does it happen that both lungs are engaged; in either case the progress of the complaint is not so rapid as to afford an instantaneous impediment in the affected part to the act of hematoses; but the blood which circulated in the pulmonary artery and veins through the affected part is, up to a certain stage of the disease, partially converted into arterial blood; this is poured into the left side of the heart, and there mingled with the perfectly formed arterial blood coming from the sound portion of the lungs, producing but a slight variation from the colour of true arterial blood. It is obvious therefore, that except in cases of

a violent nature, or where the inflammation occupies a considerable extent of lung, the alteration which the colour of the countenance undergoes must be but slight, and that this alteration is such as would arise from the circulation of blood not bluish, as in the case of bronchitis, but rather of a dull red, or brick color. In pleuritis, while the disease occupies one side only, scarcely any obstruction is offered to the transformation of venous into arterial blood; for the pulmonary tissue and mucous membrane being unaffected, the process of hematosiis will be perfected in all the parts of the lungs which are permeable by the air. If indeed the affection be general over one side, or if the inflammation be so violent that a copious effusion is suddenly produced, then it may happen that the lung will be compressed or folded on itself towards the root, and remain nearly inoperative in that process; but still all the blood which is transmitted through this lung will be properly transformed, and so no blood can pass to the left side of the heart but such as possesses the genuine florid colour of arterial blood. If therefore there were no accompanying fever, the countenance would remain, as far as colour is concerned, in a perfectly natural state; but inasmuch as there generally is a considerable degree of concomitant fever, and that too of the angiotenic form, (that is, where the circulating system is chiefly engaged,) it is evident that the capillary system must be injected with a florid blood, and

so produce that floridness of countenance which is peculiarly remarkable in cases of violent pleuritis. If both sides are simultaneously affected a case which rarely occurs, then the obstacle opposed by the pleuritic effusion to the dilatation of both lungs causes a very material obstruction to the transformation of the venous into arterial blood, and blood will pass to the left side of the heart, notwithstanding the compressed state of the lungs, which has not been completely submitted to the action of the atmosphere; the countenance therefore will assume an appearance more or less similar to that of pneumonia or bronchitis, according to the severity of the complaint. What I have now said applies to these affections only when in an uncomplicated form; when they are complicated with each other the flush peculiar to each is of course modified by that attendant on the superadded affection; for example, in pleuro-pneumonia, (that is, where inflammation of the parenchyma of the lungs is complicated with pleuritis,) we may expect to find the dusky lurid red of pneumonia assuming the place of the florid cast of pleuritis, because a moderate degree of inflammation of the lung will produce a greater deviation from the natural color of the countenance than the same degree of inflammation of the pleura.

In those cases where bronchitis is superadded to pneumonia, the observation is equally or even

still more strictly true ; and even in simple pneumonia it may happen that the colour of the countenance shall approach more to the cast which I have described as peculiar to bronchitis than to that of genuine pneumonic suffusion, and for this obvious reason, that in all cases of pneumonia there is to be expected, at a certain stage, an increased secretion from the bronchial mucous membrane ; if the fluid thus produced be not excreted as quickly as it is secreted, then such a modification of the colour of the countenance as occurs in bronchitis must necessarily take place ; and it is observed, that in complicated affections the colour proper to that affection which offers the most material and instantaneous obstruction to the function of hematosiis must be the predominant one, that in pleuropneumonia the colour of the countenance must be rather pneumonic than pleuritic, and that in the complication of bronchitis with pneumonia the hue must be bronchitic rather than pneumonic. These considerations satisfactorily account for the colour of the countenance in thoracic inflammations without having recourse, as some very eminent pathologists have done to particular sympathies existing between the tissues affected and the external surface ; the possibility of such a sympathetic connexion I do not venture absolutely to deny ; and I will even go so far as to say that there are certain phenomena which are difficult of explanation on any other supposition

than this sympathetic connexion ; for example, it sometimes happens thnt in pleuritis one cheek is considerably flushed while the other retains its natural colour, and the same is often observable in pthisis ; this some have endeavoured to explain by supposing a sympathy existing between the serous membrane and the integumentary system of the same side of the body, and they have founded this opinion on the alleged fact, that when such a phenomenon does occur it is found that it is the cheek of the affected side which is suffused. My own observation scarcely affords me ground either to affirm or deny this assertion. I think I have observed, that in the majority of instances of thoracic inflammation, where one cheek only was flushed, it happened indifferently that in some cases the correspondent side of the thorax, in others the opposite was the seat of the inflammation ; and even in several both cheeks were at different times and alternately suffused, the inflammation not having changed its situation.

As I have mentioned in this place the complications of these diseases, it may be worth while to say a few words on the question of which of the three is most liable to become superadded to one of the others, that is which of the tissues, the serous, parenchymatic, or mucous, is most liable to be consecutively or sympathetically affected by the

inflammation spreading from either of the others.

In the first place it rarely happens that the mucous membrane becomes affected when the serous is the seat of the primary inflammation, that is, the inflammation but seldom extends from the pleura to the mucous membrane of the bronchiæ, neither does it often happen that, vice versâ, the inflammation extends to the pleura from the mucous membrane; nevertheless, as far as I can judge from my own experience, this extension of disease occurs far more frequently than the former, for I have occasionally met with cases wherein a patient, while labouring under bronchitis either acute or chronic, has been suddenly attacked with pleuritis though no external exciting cause of the latter could be assigned, and it is particularly remarkable in such cases, that the intermediate texture, that of the lung is not in general affected; of this I have had some opportunities of satisfying myself by examination post mortem where the patients sunk under the complication, and where both mucous membrane and pleura exhibited the usual appearances that those parts present after having been inflamed, but the pulmonary tissue showed nothing in the slightest degree justifying the supposition that it had undergone any stage of inflammation; I consider this to be a remarkable phenomenon, because while it participates in the nature of metastasis, it is not an instance of perfect translation, since both the structures, that

which was primarily; and that which was secondarily affected, were at the same time the seat of inflammation; it is also remarkable in this point of view, that it establishes a difference between the mode of propagation in the case of these tissues, and that by which inflammation extends from the parenchymatous to either of them, and vice versa, the latter, we must conclude to depend on that kind of sympathy which we term contiguous, the former must be ascribed to altogether a different species.

In the second place, it is notorious that a complication of pleuritis and pneumonia, (pluropneumonia) is a very frequent form of thoracic inflammation, though perhaps not so much so in these countries, as either pneumonia or pleuritis simply; is the origin of inflammation simultaneous in both tissues or not? and if not, which is the one most frequently the organ consecutively affected, that is, which is the one to which the inflammation oftener extends from the other? I have no doubt this is the pleura; first, from what I have witnessed in the dissections of those who have died of thoracic inflammations; secondly, from an a priori consideration of the question; and thirdly, from stethoscopic observations.

First, in fatal cases of pneumonia, I have much more frequently met with slight inflammatory appearances in the pleura, accompanied by sparing

effusion, than I have in fatal instances of pleuritis detected traces of inflammation in the pulmonic tissue ; indeed, except in decided cases of pleuropneumonia, the latter appearance is very seldom to be met with ; there is, it is true, a modification of the pulmonary structure which is occasionally found accompanying pleuritis, a condensation of tissue ; this however is quite distinct from the change produced by inflammation ; Laennec has adopted for it the term carnification, to prevent its being confounded with hepatization ; in it the only deviation from the structure natural to the lungs is the compression of the air vessels produced in the first instance by the effusion of sero-purulent fluid into the cavity of the pleura, which takes place so suddenly that the side of the thorax has not time to conform itself to the increased bulk of its contents, and this compression is subsequently continued, (in some cases at least in which absorption either total or partial of the effused fluid occurs) by the pseudo-membranous expansion which frequently forms on the pulmonary pleura, and which being of an unyielding nature, prevents the dilatation of the lung to its ordinary dimension when the fluid is removed, which otherwise, we infer, must have followed the absorption of the fluid, without having recourse for its explanation to such a vital quality as active dilatability of tissue which some insist upon, the expansion of this pseudo-membranous formation over the pulmonary pleura Laennec very ingeniously applies to

the explanation of the absence of respiratory murmur in the side of the chest, which had been the seat of pleuritis, but where the fluid had been absorbed ; it is evident that it equally accounts for the persistence of carnification in similar cases.

Secondly, if we consider the question a priori we shall arrive at the same conclusion, viz. that pleuritis is more frequently superadded as a consecutive affection to pneumonia, than pneumonia to pleuritis ; for it must be admitted that of two tissues possessing different degrees of vital properties, and different degrees of power of augmentation of those qualities from accidental causes, that which is endowed with the higher degree of both, is the tissue most likely to be secondarily engaged by the spreading of inflammation primarily affecting the other, that is, that if inflammation exist primarily in the texture possessing the lesser degree of vital power, there will be a greater probability of its extending by contiguity to that possessing the higher, than there would of its passing from the tissue possessing the higher to that endowed with the inferior vitality if it existed primarily in the former, because it is to be supposed that in whichever the vital qualities are more prominent, that tissue will be more likely to be sympathetically excited to præternatural activity, hence the pleura which possesses greater vitality, and of which the vital qualities are more easily augmented than those of the parenchyma, must more frequently enter into inflammation, from inflam-

mation existing in the lung, than the lung from inflammation in the pleura.

Lastly, from auscultation I conclude that a slight pleuritis is not a very unfrequent addition to pneumonia; for I have frequently observed that in the earlier stage of pneumonia, while the permeability of the lungs remained tolerably perfect, and the crepitous râle appeared to be gaining ground on the natural murmur, all sounds have been suddenly or at least within a few hours suspended, the sound on percussion all over the side becoming dull, even in cases where I felt confident from the mildness of the symptoms, that the inflammation could not have been sufficiently violent to account for so speedy and total an abolition of the permeability of the organ, on the supposition that it was produced by hepatization; this I think could only have been produced by the quick effusion of fluid into the pleura, which we can have no hesitation under the circumstances of attributing to sympathetic inflammation in this part. The conclusion I have drawn from such cases might have either received additional confirmation, or have been altogether overturned, if they had occurred to the celebrated inventor of this method of auscultation, whose experienced ear might have enabled him to detect ægophony just previous to or at the same time when the suspension of the respiratory murmurs, and of the sound on percussion, had taken place. For my own part, though I know

that a peculiar modification of the voice is produced by a moderate degree of effusion in the pleura, yet this alteration and bronchophony appear to me to pass into each other by such insensible shades, that I have not perfect confidence in myself in such cases, and am apprehensive of mistaking the one for the other. I do not wish to be understood as asserting that perfect ægophony can be mistaken for bronchophony; but there are so many degrees of both, and the less perfect of the former approximates so closely to the latter, that I am very cautious of founding a diagnosis on the presence or absence of either. In the hands of the most experienced practisers of this art I have no doubt that this case might be cleared up, because if one was able to distinguish bronchophony, after the crepitous râle had existed for a time, and subsequently to detect ægophony when the sound of respiration and that returned on percussion became extinct, then the inference would be very fair that the pleuritis had succeeded the pneumonia, that is, that the pleura had been the organ secondarily affected.

There is besides another reason why pneumonia should be less frequently consecutive on pleuritis than pleuritis on pneumonia, at least if we take for granted the truth of an assertion made by Laennec, which is, "*that when the lung is completely compressed it is no longer susceptible of inflammation.*" Now if pleuritis be the original

affection, the effusion that in genuine cases accompanies it by compressing the lungs throws another obstacle in the way of the part becoming inflamed. I will not venture to affirm or deny the truth of this position which Laennec, with the ingenuity peculiar to himself, argues for on the analogy of inflammation in other parts being prevented by the application of pressure, as in the case of sprains, burns, and erysipelas. This, however ingenious, is a principle we should be cautious of admitting; since if pressure prevents inflammation in some cases, it is equally clear that it causes it in others.

It is stated by Laennec, in his first edition, (vol. I. p. 329) that in general it is more usual to meet in dissection pneumonia, without pleuritis, than pleuritis without pneumonia. This assertion I find he has withdrawn in his second edition; and I have already stated, that it is at variance with my own investigation, post mortem. But even granting it to be the case, it is not to be admitted as an argument against the opinion I have advanced, "*that the pleura is the organ most frequently consecutively affected;*" because as Laennec has himself observed, almost all the cases of ordinary pleuritis terminate favourably; we have therefore no means of ascertaining whether in these cases the inflammation had at all extended to the pulmonary tissue; the inference that it had, from the circumstance of its being seen frequently to do so in fatal cases, would be a

mere *Petitio principii*, since it is extremely probable that it is to this very extension of the inflammation to the pulmonary tissue, that the fatal result ought to be in such instances attributed.

We have now to consider the question, "whether does inflammation more frequently spread consecutively from the mucous to the parenchymatic, or from the parenchymatic to the mucous structure of the lungs." The same physiological reasoning which we have applied to the case of the pleura and parenchyma, applies equally here; the vital qualities of the mucous system being predominant, it ought to be the tissue more frequently consecutively engaged; and the fact is so: for while it is very common for bronchitis to be superadded to pneumonia, it is extremely rare for pneumonia to be superadded to bronchitis; and there is one circumstance which strikes me as being very remarkable, viz. that true pneumonia should so much less frequently supervene on bronchitis than pleuritis does. Of this as far as my own experience affords me a right to decide I feel quite convinced,* and the explanation of it

* This opinion is contradictory to that which I find advanced by M. Laennec, in his second edition, (vol. I. page 194) which is, that the supervention of pleuritis on bronchitis is much less frequent than that of pneumonia. I cannot reconcile the two assertions except on the supposition, that there is in this country a greater disposition to inflammation of the pleura than in France. No one can doubt the accuracy of Mr. L.'s statements, but it will

seems not very easy ; for although on a principle similar to that assumed above, of two elementary tissues of any organ, having different degrees of vital qualities, that which possesses the highest ought to be most prone to become sympathetically excited by irritation existing in a third elementary tissue of the organ ; yet if the tissue endowed with the minor degree of vital qualities have the advantage of contiguity with the tissue primarily affected, it seems difficult to comprehend how the affection should extend itself, “per saltum,” leaving the intermediate tissue uninjured, and that too, when this part is so much more intimately connected with the tissue primarily engaged, in respect to the common function.

Perhaps I have expended too much time on these questions ; but although they appear of a somewhat speculative nature, the right understanding of them will no doubt lead to practical advantage ; for instance, from the consideration of them we may know, that in moderate pneumonia, we are to expect a certain degree of pleuritis, in which case we may anticipate, if we agree with Laennec, a consequent checking of the pneumonia ; but on this subject I cannot venture to pronounce any opinion, it

be seen by the difficulty I have found in accounting for the phenomenon, that my assertion has been derived from observation and not from theory.

rests chiefly on a position on the truth or falsehood of which I have already declared my incompetence to decide, namely, that pressure on the lung assists in checking inflammation; I shall here only say, that if the superaddition of a slight degree of pleuritis be indeed salutary in pneumonia, its utility appears explicable on other grounds than the mechanical operation ascribed to it by Laennec, viz. the same as those to which we attribute the advantages derived from exciting irritation or inflammation and the discharge of fluids from parts contiguous to inflamed organs, that is to a species of translation, which if not a complete metastasis, at least effects a division of the evil.

The case which I have put (page 92) shows the fallibility of the method of auscultation in certain cases of chronic inflammation; if to this we add that in the same instance the disease might be one of a chronic nature not actually inflammatory, such as hydrothorax, or an extreme case of œdema of the lung, or that it might even consist in the extensive developement of solid productions either on the pleura or in the lung (though in the latter case it is not generally to be expected that the suspension of sound should be observable over the whole side of the chest), we shall see additional reason for directing our attention to the study of the auxiliary diagnostic signs, such as the nature of expectoration, the measurement of the sides of the chest, the colour of the coun-

tenance, &c. But this uncertainty is not exclusively confined to chronic inflammations.* Acute pleuritis may be the disease, and yet it is possible to mistake it for an advanced stage of pneumonia; for in some instances of pleuritis it is not unusal to find the chest from the commencement quite natural, in a considerable extent, both as to resonance and respiratory murmur; in another part the sounds are altogether suspended, if there be an encreased secretion of mucus in the bronchia, or if the disease, as is not uncommon, occurs in a person habitually affected with catarrh, the mucous râle discoverable in the neighbourhood of the boundary between the resonant and non-resonant parts, may be confounded with a slight degree of the crepitous, and so the affection mistaken for pneumonia, at least this may happen to persons not very perfect in the art of auscultation; and yet the case may be pleuritis, in which the inflammation is checked, and the effusion prevented at certain points of the pleura, generally the superior, by old adhesions of the short cellular nature, which uniting the pulmonary and costal pleura bring the lung, as it were, into contact with the parietes of the chest, and thus render the respiratory murmur even more distinct than in the natural state.

* Of this I might almost say the case of Loughlin Craven offers an instance, but probably some might consider it if not a case of absolutely chronic pleuritis, at least intermediate between the acute and chronic forms of the disease.

I have seen several instances of this modification of pleuritis within the last three years, at least eight or ten, so that it is necessary always to be on the watch and never to form a diagnosis without exploring different parts of the chest.

The danger of falling into error, in a case of partial pleuritis, is considerably augmented if the patient happen to be affected with œdema of the lung, which, as is known, produces a râle similar to that attendant on the first stage of pneumonia. The following case will serve as an example :

Richard Irwin, aged 16, admitted to Sir P. Dun's Hospital ; complaining of dull pain in the left side of the thorax, the precise situation of which he was unable to point out. He had been attacked about a fortnight before with severe thoracic inflammation of some kind, for which he had been repeatedly bled, but though the disease was severe, the pain attendant on it was not very intense. This he referred to the middle of the chest, somewhat to the left of the middle of the sternum ; he had also had palpitation, which is now occasionally troublesome. He lies with perfect ease on the left side,* and even on the back, though not so comfortably ; the epigastrium is somewhat swollen, but without any defined or

* At the commencement he lay with greatest ease on the right side, but that position is now almost intolerable, on account of dyspnoea, which is immediately induced.

solid tumor ; the right hypochondrium natural as to size, and not at all hard or tender to the touch. The countenance nearly natural ; the skin generally of a leuco-phlegmatic appearance. The extremities anasaruous, and the parietes of the chest, especially of the left side, beginning to exhibit the same infiltration. The exploration of the thorax gave the following results :—*left side* ; neither dilated nor contracted ; and the sound, on percussion, dull all round, below the level of the mamma in the erect position ; respiratory murmur quite inaudible in the same region, except close to the spine ; neither bronchophony nor ægophony, except at the posterior, where close to the spine, and on the margin of the diseased portion, a kind of resonance of the voice could be *occasionally* detected, which might be considered as a modification of one or the other, above the bounding line ; the respiratory murmur was quite distinct, but there was a slight degree of crepitous râle present ; these results were not affected by a change in the position of the patient. *Right side* ; sound on percussion natural, crepitous, or rather sub-crepitous râle, more audible than on the left side, and respiratory murmur quite distinct over the entire of it, the râle not being remarkable enough to mask the natural sound. Expectoration slight and catarrhal.

On detecting the crepitous râle in the superior part of the left side, the inferior returning a dull sound on percussion, and no respiratory murmur, and these signs remaining unaltered notwith-

standing the patient's change of position, I at first conceived the disease to be an advanced stage of pneumonia; but on finding the crepitous râle in the healthy, or comparatively healthy, side, and also observing the general tendency to anasarcaous infiltration, I concluded that the crepitous râle arose from œdema of the lungs, and that the disease was pleuritis, in which the interposition of fluid between the lung and pleura costalis, at the superior part of the left side, was prevented by close adhesions uniting the pulmonary and costal pleura all round, from the level of the mamma upwards, so that in all situations above the bounding line the respiratory murmur and natural sound on percussion remained. I treated the case, therefore, as effusion after pleuritis; and I believe this view was correct, because the colour of the countenance and the nature of the expectoration were pleuritic throughout; and because also as improvement took place, the patient began to rest with ease on the sound side, which I have in a great number of instances observed to be the case when the effusion is undergoing absorption. The crepitous râle disappeared before all the fluid was absorbed from the pleura; indeed at the time of the patient's departure from hospital there was still so much of it remaining unabsorbed that the respiratory murmur could not be heard in *so distinct* a manner as natural. If the disease had been pneumonia, on the return of the respiratory murmur in the diseased part, the crepitous râle ought to have been discovered; but

this, as I have said, was not the case, and therefore the probability, that a right conception of the disease was formed, is rendered still greater; but after all there is still some uncertainty, for it might have been pleuro-pneumonia.

The palpitation and the original seat of the pain point out the pericardium as having been also affected, but that part of the complication which is most interesting, with a view to my present object, is the pneumonic or pleuritic affection.

The above case shows the danger of mistaking pleuritis for pneumonia, when the former is partial, from the occurrence of bounding adhesions, whether these be of old standing or of recent formation. The following will show the possibility of falling into a like error, even where the pleuritic inflammation is not circumscribed by bounding adhesions.

A man (Thos. M'Caul) aged 60, was admitted, complaining of violent and intermitting dyspnoea, which depended on organic disease of the heart, the nature of which was concluded to be ossification of the valves of the left side, with enlargement and hypertrophia of both ventricles; he was of a leucophlegmatic habit, the limbs anasarcons, and in both lungs the crepitous rale existed, in such a degree as to lead to the conclusion that there was oedema of the lungs.*

After a venesection or two, a course of tartar emetic in large doses, and hydragogue cathartics, his breathing was relieved; the anasarca swellings subsided, and the crepitous râle was nearly extinct; however as a trace of it still remained, and as I was anxious to satisfy myself by post mortem examination of the fact, that the râle was produced by œdema and not pneumonia, I retained the man in the hospital, judging from the advanced stage of the disease of the heart that the fatal termination was not far distant.

He was soon afterwards seized with inflammation in the left side of the chest, which, from visiting him within seven hours from the commencement, I had no difficulty in recognising as pleuritis, even although the crepitous râle was present.

I was disappointed in my expectation of hearing ægophony, although I saw him twice each day until the respiratory murmur was completely extinct, and the sound on percussion quite dull; this however did not make me doubt the accuracy of the opinion I had formed, that the disease was pleurisy, because it often happens where the effusion is copious, which is usually the case in

* As the râle continued several days after his admission without any alteration in the natural sound on percussion, and was besides general over both lungs, there was no reason to conclude it arose from pneumonia.

persons of this patient's habit, that the period during which ægophony can be heard at the commencement of the disease, does not exceed three or four hours, besides which I am inclined to think that there is some circumstance with which we are not yet acquainted, which controls the appearance of this sign.

The disease ran on into a chronic form, the effusion was universal over the entire of the left side. By the most accurate admeasurement the side was neither dilated nor contracted; in about a month, spontaneous absorption commenced, and after some time the respiratory sound began to return, the crepitous râle still accompanying it. The return of the true respiratory murmur was first noticed in the space from the inferior angle, of the scapula downwards, and from the angle of the rib inwards to the spine; respiration was sooner heard in the superior parts, but it was not natural; it was bronchial respiration. There was a resonance of voice at the inferior angle of the scapula, which was intermediate between bronchophony and ægophony, neither of these was discoverable any where on the anterior.

At this period a recurrence of the original disease carried off the patient, and on examination of the body the left pleura was found exhibiting both long and short adhesions, the latter apparently of more recent formation; the costal pleura coated with a thick covering of pseudo-membranous

formation, which seemed completely co-organised with it; there was a small quantity of sero-purulent effusion evidently undergoing absorption, the short adhesions were in the situations where bronchial respiration had been discovered; the lungs were œdematous, and the alteration of the heart such as was anticipated. It happened from the circumstance of this patient having been under my eye at the very first moment of the pleuritic attack, that I was able to decide with certainty that it was pleuritis, because the extinction of the respiratory murmur, and of the hollow sound on percussion, took place in so sudden a manner as to be inexplicable on any other supposition than that of pleuritic effusion, but had I not seen him until the period when the effusion began to be absorbed, and the respiratory murmur to be again audible, while the sound on percussion became less dull, I must inevitably have fallen into the error of supposing the disease to be chronic pneumonia, unless I had been previously aware of the œdematous state of the lung producing the subcrepitous rale.

The instances I have already cited show that with the most careful investigation we might, in particular cases, if we depended on auscultation and percussion alone, mistake both bronchitis and pleuritis for pneumonia; the converse of the proposition is true, and indeed there is a greater probability of pneumonia being mistaken for pleuritis, than pleuritis for pneumonia, because, as I have said, pleuritis is very frequently superadded

to pneumonia, and when they co-exist, the phenomena dependent on the pleuritic affection mask or conceal those which belong to the pneumonic.

My present limits do not allow me to enter into other topics connected with the auscultatory diagnosis of thoracic inflammations, much less to examine the causes which sometimes render uncertain, the diagnosis of the general diseases of the chest. I may hereafter recur to these subjects, if the observations contained in this communication shall be judged by my professional brethren worthy of continuation. They will not, I trust, be construed into any thing like a disparagement of the method of mediate auscultation. My object has been to point out the cases of thoracic inflammation, in which the conclusions deduced from it are not to be implicitly depended on, and thereby to prevent the disappointment to which practitioners must be subjected, and the obloquy and neglect into which the method must necessarily fall, if by the too enthusiastic ardour of its partisans it be extended to cases to which it is not applicable. The opposition naturally incident to the promulgation of a new doctrine, is not the only danger which it has to encounter, it is exposed besides to the still greater peril arising from intemperate advocacy, and it is from an earnest desire to counteract the latter that the preceding remarks have originated.

MEDICAL REPORT
ON THE
FEIGNED DISEASES OF SOLDIERS,

IN A LETTER ADDRESSED TO

GEORGE RENNY, ESQ. M. D.

DIRECTOR GENERAL OF MILITARY HOSPITALS IN IRELAND, &c.

BY JOHN CHEYNE, ESQ.

PHYSICIAN GENERAL.

SIR,

HAVING been in charge of sick soldiers during the greater part of my professional life, first in the Ordnance Department, to which I was attached for nearly fifteen years, and more recently in the General Hospital in the Phoenix Park, for upwards of seven years, I have had extensive opportunities of acquiring a knowledge of their characters and habits. Of late I have paid considerable attention to the conduct of *malingerers*, as those individuals who simulate or produce disease to evade duty, are called in the military hospital. I have also had many opportunities of communicating with army medical officers on the

subject of *malingering*, and thereby ascertaining their methods of abating this, which, in many corps, is an intolerable nuisance. And having in these methods observed much discrepancy, and in the practice of some military surgeons, no small degree of caprice and irregularity; and conceiving that a simple and definite procedure is attainable, I have been induced to address a few observations on the subject to you, who have given ample proof of the advantage of introducing system into the department over which you preside, and who, by your influence, may be enabled to establish rules for the treatment of feigned diseases, and thus remove the chief difficulty which belongs to the performance of a very disagreeable duty.

It appears to me that the following objects naturally come under consideration: 1st, the diseases which are most generally feigned; 2dly, the methods which the malingerer adopts to deceive the medical officer; 3dly, the best means of detecting the fraud, and 4thly, the most successful way of treating malingerers, and preventing the extension of their fraudulent practices in regiments. With a view to these objects the following queries were circulated among the staff and regimental medical officers on the Irish Establishment in 1823; and I have been enabled thereby to elicit a considerable variety of information from those who are practically acquainted with all the difficulties of the subject.

QUERIES.

1st. What are the diseases which are most generally simulated by soldiers? Specify such as have come within your own observation, and the means by which you have been enabled to distinguish the feigned from the genuine disease.

2d. Have you detected any of the methods employed by soldiers in counterfeiting diseases? If so be pleased to give a particular description of them.

3d. Explain the means which you have adopted in order to force the detected malingerer to return to his duty. Have you been obliged to use restraint or punishment, in order to prevent him from retarding his cure?

4th. Have you ever been led to conclude, that a disease was simulated which proved to be real? If so, give the particulars of the case.

It may be necessary to observe, that the medical wing of the King's Military Infirmary, or General Military Hospital, in the Phoenix Park, is chiefly occupied by those soldiers belonging to the Garrison of Dublin who are affected with fever or other acute diseases, and by the sick from the regimental hospitals, when these are broken up, upon the corps to which they belong

being ordered away. A considerable number of the latter class are men who appear to labour under chronic diseases ; and it frequently happens that individuals of this class, being anxious to obtain their discharge from the service, either exaggerate their sufferings, in order to effect that object, or actually pretend to labour under diseases which have no reality, but which they are taught to imitate with great address. The medical wing of the hospital is under the charge of the Physician General ; and as it is seldom without many candidates for a discharge, it becomes one of the most difficult duties which he has to perform to distinguish between sterling and counterfeit disease. To force a soldier who is unfit for the hardships of a military life to continue in the service, would be undoubtedly an act of great oppression, as well as a source of frequent disappointment to the commanding officer of the corps to which he may belong ; while, on the other hand, every instance in which fictitious or fabricated disease escapes detection and punishment, becomes not merely a reward granted to fraud, but a premium held out to future imposition.

The difference in different regiments with respect to the number of malingerers is very great indeed. The extent of malingering also varies in different periods of our military history. In the present period of highly improved discipline of the British army, probably there are not two malingerers for ten who were to be found in the mili-

tary hospitals thirty years ago. As the discipline of a corps approaches perfection, instances of simulated disease ever become less and less frequent. I have often been able to form a correct judgment of the discipline of a corps, after it has been a few months in garrison, merely by the conduct of the sick in hospital: there is a respectful, satisfied and manly demeanour even under heavy sickness or severe pain, observable in the men of some regiments, which is strongly contrasted with the uncivil, sulky, lounging manner of those who belong to others. In some of the cavalry regiments, in some of the Highland, and other distinguished infantry battalions in which, along with a mild but exact discipline, there is a strong attachment to the service, and a remarkable esprit de corps, there is scarcely an instance of any of those disgraceful attempts to deceive the surgeon. While in regiments which have been hastily recruited, or reformed under circumstances unfavourable to progressive and complete discipline, the system of imposition is perfectly understood, as may be proved by inspecting the hospital. Among those who counterfeet disease, the Irish are the most numerous and expert, the lowland Scotsman comes next to the Irish, and what he wants in address, is supplied in obstinacy. Malingering seems to me least of all the vice of the English soldier.

There is a kind of free masonry among soldiers, which is perhaps conducive to the harmony of the

barrack room, but which, preventing the exemplary from exposing the worthless, and holding up the informer as an object of universal detestation, renders it extremely difficult to come to a right understanding of the various methods of simulating disease. I have no doubt that these methods have been systematized, and that they are preserved in many regiments, and handed down for the benefit of those who may be inclined to make trial of them. That this opinion may not appear fanciful, I shall, before proceeding further, relate one or two instances of systematic fraud practiced for the purpose of deceiving the regimental surgeon.

When the 18th hussars embarked for England in 1807, one of the men of that regiment who had been left behind in the King's Infirmary, joined at Rumford, with his scrotum very much enlarged and inflamed, his story being as follows. Soon after leaving the infirmary, he jumped from a window, upon which he immediately perceived a swelling in the groin ; on his landing in Liverpool, it became so large and painful that he could not walk, and was obliged to be forwarded to head quarters in a cart ; on handling the swelling, the surgeon of the regiment having perceived an unusual crepitus, as if air were diffused through the cellular substance, immediately wrote a state of the case to the late Mr. Obré, who was surgeon to the King's Infirmary, and in the mean time he used warm applications, purgatives, and low regimen. Mr. Obré, in reply, inclosed a paper

that had been picked up in the ward of the infirmary, in which this man lay, containing "a receipt for making a rupture," in which were directions to puncture the bag with a corking pin, and then, by means of a piece of a tobacco pipe, to blow it up with air, and if it were wished to produce a double rupture, the same thing was to be done on the other side, after which warm poultices were to be applied to take down the inflammation. The man strenuously denied ever having made use of any such means. By the applications directed, the swelling gradually subsided, but, while under treatment, he got, or pretended to get a pain in the right hip and groin, and inability to move the limb. From this man's previous history, his new complaint was believed to be feigned. He was placed on low diet, the shower bath was used along with purgatives, a mercurial course, repeated blisters and issues, but he would not yield. The commanding officer of the regiment disregarding the opinion of the surgeon and Dr. Warren, Deputy Inspector of hospitals, had this man brought forward and discharged previous to the embarkation of the corps for the Peninsula, and was much displeased because the surgeon refused to sign a commendatory certificate, by which refusal the reported man, who had been many years in the regiment, lost his pension. The same commanding officer, after his return from Corunna, met this man in London perfectly well, and following the laborious occupation of a porter.

In the years 1804 and 1805, the great increase of ophthalmia in the 50th regiment, and the reported detection of frauds in other regiments led to suspicion in the mind of the surgeon of that corps, and consequent investigation, by which a regular correspondence was detected between the men under cure and their parents and friends. The ophthalmics requested that corrosive sublimate, lime, and blue stone might be forwarded to them, through which they hoped to get their eyes in such a state, as would enable them to procure their discharge with a pension, and they mentioned the names of men who had been successful by similar means. Proofs of guilt having been established, the delinquents were tried by a court martial, convicted, and punished.

As allusion has been made to ophthalmia, I may take the present opportunity of observing, that I never saw a more humiliating picture of depravity, or perversion of reason, call it what we may, than I have witnessed in a ward filled with soldiers labouring under that disease ; most of the cases, as I learnt from the surgeon in attendance, being factitious. The methods, by which inflammation of the eye is produced and maintained, have not all been brought to light, but quick lime, infusion of tobacco, the gonorrhæal discharge, cantharides ointment, nitrate of silver, blue stone, and other metallic salts, are probably among the most-common irritants employed. Inflammation thus caused is most painful, and is kept up under every privation which can

make life miserable: locked up in a dark ward, and permitted to have intercourse only with the officers of the hospital, nurses and orderlies, confined to diet which, from the absence of every stimulating material, is most disrelishing, suffering under painful external applications, and nauseating internal medicines, phlebotomized and leechied till their complexions are bloodless, their pulse hæmorrhagic, and the frightful train of nervous symptoms, which excessive bloodletting produces, is established in the system—.All these evils, in many cases, have no effect but to confirm the soldier in his determination to destroy one or both of his eyes, that he may be dismissed from the service with the chance of a small pension.

Wonderful indeed is the obstinacy which some malingerers evince. Night and day they will remain with the entrance of a fakir, in a position the most irksome. For weeks or months many men have, with surprizing resolution, sat and walked with their body bent double. Some have continued to irritate sores in the leg until the case became so bad as to require amputation of the limb, and many instances have occurred, in Military and Naval hospitals, of factitious complaints ending fatally.

Perversion of reason rather than the attainment of a discharge or the evasion of duty, would sometimes appear to give rise to the simulation of disease. Soldiers, I have no doubt, are often actuated by

the same wayward fancies so perplexing to the physician which influence hypochondriack or hysterical patients in the middling and upper ranks of life. I have known some persons, in seeming health, who have been hindered solely by its expensiveness from indulging in a medical visit daily. I knew one lady of high rank, who, whether sick or well, required a visit from her physician every morning. Many are induced to complain from a froward humour, to annoy their relations or dependents, sometimes merely to obtain sympathy. I know a female who long pretended to be consumptive. By voluntary efforts she coughed incessantly during my visits, and she was twice observed inserting a pin between her gums and teeth, whence she sucked blood, that she might present her handkerchief, stained with blood, at my visit, which she did for several weeks. Some females have pretended that they have had no menstrual discharge for many months, while their perfect regularity was ascertained. I have known a patient aver that no discharge had taken place from the bowels for an unprecedented time ; in this case it was afterwards discovered that the fæces were consumed in the fire every night. Some have affected a loss of the power of expelling urine, some have pretended to be without the least appetite for food,—that they had eaten nothing nutritious for I do not know how long, at the same time that they were supplying the cravings of hunger by stealth. Substances have often been presented which it has been alleged

were vomited, discharged from the bowels, or bladder, which were not the product of any animal process. A similar caprice will often influence the conduct of the soldier, who, without any ulterior object, will experience some unaccountable gratification in deceiving his officers, comrades, or surgeon.

When a soldier is suspected of malingering, the medical officer ought to conceal his suspicions until they are confirmed or removed. He will then have all the advantage of seeing the suspected party under a variety of circumstances favourable to cool investigation. His arrangements should be such as to enable him to detect fraud; his hospital serjeant and orderlies men on whom he can depend. By a prudent course the malingerer may be led to change his procedure, which he will sometimes do when the medical officer, while he does not deny the existence of the alleged complaint, appears to undervalue its importance; thus a soldier who had hoped to obtain his discharge by simulating rheumatism, has been led to add hæmoptysis to his complaints, upon which the deceit becoming apparent, there was no difficulty in exposing the fraud, and forcing him to return to his duty. A regimental surgeon once told me that he often appears to give credit to all that the malingerer relates of his disease, and puts questions unconnected with the pretended symptoms, and that it has thus frequently happened that the view which he seemed

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to take of the complaint has been adopted by the soldier, thereby giving rise to such contradictions as were a means of forcing him to relinquish his attempt at deception. There is something unpleasant in so artificial a course, which moreover is only suitable to those whose disposition leads them to obtain their object by indirect measures. It appears however to be necessary that we should conceal our suspicions, which, if betrayed, would lead the malingerer to great watchfulness and obstinacy, and thus he would never be off his guard, and would sacrifice his life rather than yield. The method which I used to pursue, of declaring, in the hearing of the party, that he was malingering, although it may sometimes intimidate a raw soldier, will only afford a stronger motive to the hardened knave for perseverance ; and if the opinion, thus rashly pronounced, should prove erroneous, the consequences may be very unhappy : the confidence of the soldier in his surgeon will be destroyed, and the latter will be subjected to the just displeasure of his military superior.

Some cases are evident and may be discovered by a glance of an experienced eye, but others require calm and continued inquiry, during which we must learn all particulars relative to the character and objects of the supposed malingerer ; whether he has been much in hospital, is lazy and averse to his duty, which he is ever ready to evade ; whether the half yearly inspection is at hand, or he has exceeded the period of his fur-

lough, and is afraid to return to his corps. Whether he is a clerk, or has been brought up to a trade or manufacture, and has a prospect of lucrative employment if he were discharged, in short what would be his means of support in civil life ; whether he has any intention of marriage. It is certain that some malingerers have been persons of a very good character, consequently character alone is no criterion that a man is not practising this species of deceit, but in general malingerers are men of bad character, and the fact being established that they are so, will often remove all the difficulties of the case.

I am strongly of opinion that the medical officer ought not, on his own authority, in any instance, to resort to punishment in order to force the malingerer to return to his duty ; he ought to have him watched in every moment of forgetfulness ; while a doubt remains in his mind, he ought to prescribe the most effectual remedies for the disease, assuming it not to be feigned, factitious, or exaggerated, but he ought not to employ any painful remedy, unless that remedy be an approved one in the treatment of the genuine disease. When the military physician or surgeon is convinced that the complaint of a soldier is unreal, he ought to report the case to the commanding officer of the corps to which the malingerer belongs, at the same time assigning the grounds of his opinion. He may also propose any measures which his knowledge of disease, and experience in

such cases entitle him to recommend as likely to put a stop to the practices of the culprit. If the commanding officer should authorize him to employ personal restraint or punishment, then these may be had recourse to, but if he employ such measures on his own responsibility, he may have the commanding officer in opposition to him, and perhaps lose his influence, character, or commission. I am well aware, that the strait waistcoat, the log, and the solitary cell, have often been used by medical officers of character; nay, I rather think they are still sometimes employed without any warrant from higher authority, but certainly those who thus act, very gratuitously expose themselves to censure. There used to be the greatest coarseness and severity in the treatment of men in hospital, nay military as well as medical officers frequently treated common soldiers as if they belonged to an inferior order of beings. In former times, I have often heard soldiers called the greatest villians on the face of the earth, only to be kept in subjection by the lash. This was folly in the extreme, and happily it has become obsolete. It seems now pretty generally understood that man is every where the same, that he owes whatever he possesses of value in intellect and morals to culture, and I should think no officer fit to command a regiment, or superintend an hospital, who does not know that the behaviour of bodies of men entirely depends on the principles of conduct and habits of action, which result from a sound or vicious system of discipline.

I am persuaded that a regimental hospital, when well regulated, is more favorable than a general hospital to the detection of imposture. The knowledge which in most corps the officers, non-commissioned officers and surgeon must possess of the character, habits, and prospects of all the privates of the regiment, will often lead to a discovery of the motives of the malingerer, and thus divert him from his object, or disconcert his scheme. It seems therefore inexpedient to encourage the transfer of malingerers to a general hospital, unless when the regiment is going upon service, or to a remote station.

When the surgeon of a regiment understands that he is not to inflict punishment unless authorized by the commanding officer, his observations will be made with more calmness, which is highly desirable, as, even after the most dispassionate consideration, our conclusions will sometimes be erroneous, of which I could bring forward a multitude of instances. Thus in the year 1804 or 1805, a soldier of the name of Smith, of the 9th foot, who complained of great uneasiness of the loins, was treated as a malingerer, and was sent to punishment drill, at which he was kept till a tumour appeared in his back, symptomatic of a lumbar abscess, of which the poor fellow died.

A strong and active hussar, after many an ineffectual effort during eight months, to rouse him from a state of listlessness and inattention to his

person and duties, was discharged from his regiment, being generally considered as a *skilker*; being forwarded to Chatham, he came under the care of Dr. Burrell of the 72d regiment. From an absence of every symptom of disease Dr. B. was at first led to adopt the same opinion; in the course of a week however, some difficulty of articulation was discoverable, greater heaviness in his look, and sluggishness in motion appeared which, in a few days, ended in coma, convulsions and death. On dissection, two tumours of a firm medullary structure were detected in contact with each other, one of the size of a pullet's egg, the other of a pigeons egg, situated in the right hemisphere of the brain, and projecting considerably beyond its surface.

A private of the 10th regiment was taken in the autumn of 1823, by an officer of that corps, as his bat-man, but owing to a slovenly way of going about his work, he was shortly after sent back to his duty, his manner having been attributed to laziness. In a short time after, he came to the hospital complaining of lassitude, which was attributed to the same cause; at last however, an enlargement of the spleen was discovered, which was followed by anasarca and discharge from the service.

It would be tedious to multiply cases of this kind, many of which have come to my knowledge; affections of the brain, of the thorax, of the abdo-

men, diseases of the hip joint, of which I have heard of several, supposed, at first, to be feigned, eventually proving genuine and leading to death or incurable disease. Such have shown me the propriety of proceeding regularly and deliberately in every case, how much soever appearances may be against any individual who has reported himself sick.

I shall now proceed to enumerate the diseases in the province of the physician, which soldiers most frequently feign, and I shall then offer a few remarks which may be useful, particularly to the inexperienced, in leading them to a discovery of fraud.

DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

1, *Paralysis*. Palsy of one of the extremities. Loss of hearing—of speech—Nyctalopia—loss of the command of the sphincters.

2. *Vertigo*.

3. *Headach*.

4. *Epilepsy*.

5. *Mania*.

DISEASES OF THE THORACIC VISCERA.

6. *Hæmoptoe*.

7. *Phthisis*.

8. *Diseased heart*.

9. *Syncope*.

DISEASES OF THE ABDOMINAL VISCERA.

10. *Vomiting.*
11. *Tympany.*
12. *Dysentery.*
13. *Chronic Hepatitis.*

GENERAL DISEASES.

14. *Fevers.*
15. *Rheumatism.*
16. *Dropsy.*

PARALYSIS. I have known paralysis of one of the arms feigned with great constancy and address. The soldier in question pretended that having fallen asleep in the open air, he awoke with his arm benumbed and powerless. The surgeon of the regiment, being convinced that he was an impostor, had him brought to a court-martial. The court sentenced him to be punished, but the commanding officer of the corps thought that the case for the prosecution was not satisfactorily made out, and hence he transmitted the proceedings, with his own observations, to head-quarters, which led to an order from the Commander of the Forces to send the soldier to Dublin. He was brought to the King's Infirmary, and placed under my care. After due consideration I concurred in the opinion of the surgeon, that this man was an impostor, and prevented him from being discharged. I tried

various remedies ; and among the rest, smart shocks of electricity, which he bore with great resolution. At last, finding that he made no impression upon me, and that my report would be an unfavourable one, he *gave in*. We came to this compromise, he agreed to return to his duty, and I undertook to use my influence in preserving him from punishment.

The following were the considerations on which my opinion was founded : there existed none of the symptoms which characterise paralysis, save the alleged loss of voluntary motion. The countenance of the individual indicated health, vigour and intelligence ; the function of the brain was undisturbed, all the senses and mental faculties being entire ; the corresponding leg was not affected. Paralysis of the arm is a disease which soldiers are known to feign ; whereas I have not seen a case in civil life of paralysis becoming complete at once, affecting so large a portion of the body, unconnected with disorder of the brain, or of some other part of the system. In other cases of the kind there has been œdema of the hand and arm ; this however is easily effected by tying a ligature round the upper part of the limb, a process which I have detected in operation. In the treatment of such cases electricity will often succeed ; the efficacy of which I first witnessed in the General Hospital at Woolwich. Those who simulate Palsy

and Rheumatism more frequently yield to the electrick shock than to any other remedy.

Some there are however who have triumphed over every attempt which has been made to overcome their unprincipled obstinacy. About twenty years ago a trooper belonging to the 12th, who pretended that he had lost the use of his right arm, after resisting, for a great length of time, severe hospital discipline, as well as every effort of the adjutant to make him return to his duty, succeeded in procuring his discharge; when he was leaving the regiment, and was fairly seated on the top of the coach, he waved the *paralytic* arm in triumph, and cheered at the success of his plans. Indeed success, effected by the most persevering falsehood and deception, would appear to be incomplete, in the estimation of some malingerers, unless it be shamelessly proclaimed in front of the corps to which they belonged. A militia soldier who pretended that he had lost the use of his inferior extremities, was reported unfit for service, by the late Dr. Harvey, and discharged. When he had obtained possession of his discharge, he caused himself, on a field day, to be taken in a cart to the Phoenix Park, and in front of the regiment, which was drawn up in line, he had the cart driven under a tree, upon which he hung up his crutches, leaped out of the cart, sprung three times from the ground, turned his back to the regiment, and having slapt his breech, he scampered off at full speed.

In cases of this kind, by great vigilance and patience, we may sometimes discover the malingering off his guard. A case is related by Mr. Robinson, surgeon of the 12th Lancers, of a man, on board ship, who pretended that he had lost the use of his right arm. The orlop deck being much crowded, this fellow had made a berth for himself and his wife under the bow of the long boat. One day when a heavy shower came on, by which his berth was getting wet, he was detected dragging part of the tarpaulin that covered the boat, with both his hands, to protect his little cabin. He was tried, received a slight corporal punishment, and did his duty for many years after. In the 2d Rifle Battalion, a young man, still in that regiment, a few months after his enlistment, affected to become lame of the right leg; the right side, he said, had been paralytic in his childhood, and often subsequently. Mr. Scott, the surgeon, conceiving the disease to be simulated, commenced the treatment with low diet and perpetual blisters, in which he persevered for four months. Then he ordered him to walk about the barrack square, for eight hours daily, under the charge of a corporal, still keeping him on hospital diet; this continued till the half yearly inspection of the regiment was over, when, finding that no notice was taken of him, he requested to be discharged from hospital, which Mr. Scott refused till he was able to run over the barrack square

without lameness, which he did immediately, and returned to his duty.*

It is not uncommon for soldiers to pretend that they have suddenly been struck DEAF AND DUMB, while all the faculties of the mind continue unimpaired; all those whose cases have come to my knowledge, who have pretended to lose the power of speech and hearing, have been impostors. The voice may be lost, as in some nervous affections; the power of articulation also may be lost, as in some paralytic affections, but in all such cases the hearing is unimpaired. The hearing may be destroyed by various causes, generally from a diseased state of the internal ear, in that form of disease which is called nervous deafness, but in such cases the power of speech is unimpaired. That the power of those nerves which supply the organs of speech and of hearing should be destroyed, while there exists no other symptom of disease in the nervous system, while the tongue and organ of the voice retain their muscular power, is utterly incredible, and yet this description of imposture is maintained with unyielding obstinacy, as the following relation of simulated loss of speech will prove. A man, in the 12th dragoons, of the name of Holledge, a tailor, after an attack of fever in the regimental hospital, pretended to lose the use

* Malingerers pretending to have lost the use of their limbs, have been detected by putting them without their knowledge under the influence of opium, and tickling them when in profound sleep. See Mr. Hutchison on feigned diseases.

of speech. This man was left at the depot, and being a useful man as a tailor, he was retained in the regiment for five years, all the while communicating with others in writing. On one occasion, while practising firing with blank cartridge, an awkward recruit, whose carbine remained cocked, shot Holledge in the ear, who expressed pain and consternation by a variety of motions and contortions, but never spoke. This man, who had not been heard to articulate one word for five years was at last discharged. After his discharge was obtained, he recovered the use of his speech and, a vacancy occurring, offered himself as master tailor to the regiment.

The practice of this species of fraud rests upon a vulgar error. Persons who are born deaf, are said to be deaf and dumb, and hence it is supposed by the unreflecting, that the loss of the sense of hearing necessarily draws along with it the loss of the faculty of speech.

The noise of artillery is by no means an uncommon cause of deafness; many artillery officers have thus lost their hearing. Deafness may also arise from a deep-seated abscess. Mr. Elkington, surgeon to the Royals, describes a case of deafness which occurred to a recruit a few days after his enlistment, which was supposed to be feigned, but which proved to be the effect of a deep seated collection of matter in the ear. Let us moreover recollect, that along with a healthy aspect of the membrana

tympani, deafness may be connected, first, with syphilis, and precede the other secondary symptoms; and secondly, that it may be nervous, as it is called, in which case there will be observed frequent changes in the sensibility of the organ to sound, greater deafness of one ear than of the other, and a complaint of all kinds of hissing, murmuring and roaring noises.

Two recruits of the 86th regiment complained that they had been suddenly attacked with deafness during the night, without any previous illness. The state of the meatus was natural, and no proof of inflammation could be discovered. In these cases Mr. Cunningham, the surgeon of the regiment, first employed the antiphlogistick regimen, and then inserted a seton in the nape of the neck, which was regularly dressed at the morning visit: in eight or ten days they both declared that they had regained their hearing, and requested to be allowed to return to their duty.

I have heard that AMAUROSIS has been feigned probably with the aid of Belladonna; NYCTALOPIA also was frequently feigned when our army served under Sir R. Abercromby in Egypt. Of some corps nearly one half of the men were affected with this complaint, or pretended to be so, for which however a remedy was soon found. In the parties engaged in the works, a blind man was joined to, and followed one who could see, in carrying the baskets filled with earth, and when the sentries were doubled, a blind and a seeing

men were put together, and not without advantage, as during the night, hearing upon an out-post is often of more importance than sight.

Among the most troublesome malingerers are those who affect to have lost the use of the sphincters. These men are insufferable in an hospital, and would seem to have a pleasure in their abominations. When a patient alleges that he cannot retain the contents of the bowels the sphincter ought to be examined, and if it contracts upon the finger, opium with solid food must be prescribed, and a watch set over the individual; if he expel solid excrement in bed, he will be a fit subject for a court martial. I present the following case rather as a portrait of one of the abandoned creatures I allude to, than to serve as a precedent to the medical officer for dealing with such men. The practice however appears to have been abundantly successful.

A man who pretended to labour under sciatica, and to have lost the use of the lower extremities, was admitted into the general hospital at Lisburn, where he lay for eleven months. After the employment of the most approved means without the slightest advantage, it was discovered that he was a man of an infamous character; he had become most offensive in hospital from a habit of discharging his excrement in bed. Upon consultation the medical attendants came to the conclusion that this man was a malingerer, and they resolved

to apply the actual cautery. He was accordingly brought into the surgery, and laid upon his face on the operating table, and there held by four men. Upon the principal medical officer applying the first stroke of a red hot spatula to the hip, this fellow gave the man who held his leg so violent a kick that he threw him down, and instantly exclaimed that he was *shamming*, and would do his duty if released. The operator however declared that he would apply the iron to the other hip, on which he roared out, that he had been shamming to get his discharge, and would do his duty; on these declarations being made he was let down upon the ground, when, to the amusement of the whole party, he walked up to his bed as stoutly as any man present could have done, and when the buttock was healed he was sent to his duty, and never returned under the care of his medical friends.

The next disease to which I shall briefly allude is ENURESIS, or incontinence of urine from pretended loss of the power of the sphincter vesicæ. As this is an affection which soldiers frequently simulate, I shall quote, from a letter of Deputy Inspector Comyns, on the subject of feigned diseases, the following extract. “ When the city of Dublin Regiment of Militia was quartered in the town of Antrim in 1802 or 1803, the surgeon of the regiment resigned, and was succeeded by a private practitioner unacquainted with the diseases of soldiers, and much less so with their mal-

practices. Several of the men who discovered that they could easily impose upon him, reported themselves as affected with incontinence of urine, and consequently incapable of performing their duty. He took them into hospital and put them under treatment, but without the least benefit. Upon this the colonel of the regiment wrote to me to come over and visit these men, which I did next day, and was particularly struck with the appearance of the men upon parade, numbers of them had their white breeches, then in use, completely destroyed by urine; this had extended to such a degree that the colonel declared to me that he was thoroughly ashamed of the appearance of his regiment on parade. I remained in Antrim that night, and at a late hour accompanied the surgeon to his hospital, when we administered a full opiate in some of the worst cases. We returned at an early hour next morning, and on examining the beds of those men who were yet asleep, we discovered that not one of them had discharged urine during the night. On introducing the catheter, the water flowed in a full stream, and stopt when it was withdrawn, before the bladder was empty, thus affording proof that the bladder retained its full power of retention and expulsion. I then stated to the colonel my opinion that the soldiers were imposing upon their surgeon, and recommended him to order all these men who had spoiled their clothes to be marched to Lough Neagh every morning at six o'clock, and every evening at the same hour, assuring him that

if there existed any disease, the cold of the lake would, by its bracing qualities, remove it; and if the men were scheming, they would soon get tired of the cold bath and give up their attempts to deceive. This turned out as I had predicted, for on visiting the regiment shortly after, the colonel told me, that from the commencement of the bathing the numbers decreased daily, so that in a short time not a case of incontinence of urine existed in the regiment."

These measures were judicious. I believe the exhibition of a full opiate, and the unexpected introduction of a catheter during its effect, may be considered as a pretty certain method of detecting pretended incontinence of urine.

VERTIGO AND HEADACH. I have known vertigo frequently complained of by soldiers under circumstances which induced me to think the complaint unreal. The malingerer generally overacts his part; he gives an extravagant account of the degree of giddiness with which he is affected, while he is silent respecting the symptoms which attend the genuine complaint. The affection of the stomach is not described by him. If the pulse is not slow and irregular, if the stomach is undisturbed, and the eye expressive, the surgeon will find that the complaint will yield to those remedies which remove determination of blood to the head, such as purgatives, antimonials, low diet, topical bleeding, and the application of the moxa to the

scalp. And in like manner with respect to head-ach, if he fail to establish any connexion between the complaint and disordered digestion, extreme irritability of the nerves, rheumatism, a carious tooth, syphilis, or organic disease of the brain, and if his prescriptions fail, he must resort to the usual inquiries relative to the character, history, and circumstances of the individual, by which he will often have his doubts at once removed.

EPILEPSY, a disease which has been often simulated with success, and which, when feigned, it sometimes requires the utmost skill to detect, will next require a few remarks. Our enquiries must embrace the origin and duration of the disease, the symptoms which occur in the interval between the paroxysms, and the frequency, character, and consequences of these.

If the disease is alleged to have existed previously to the enlistment of the soldier, this, were it ascertained, would be strongly in favour of its genuineness. A patient, after having had a paroxysm of epilepsy, was lately sent into the King's infirmary, with a note from the surgeon who forwarded him thither, expressive of his opinion that the disease was feigned. The individual himself, who was a recruit, asserted that he had enlisted while in a state of intoxication, and that he had been subject to fits for many years. I suspended all medical treatment, and employed a

friend to write to a gentleman who lived in the parish in which the suspected man was born and bred. This gentleman, by an application to the clergyman of the parish, and to the farmer with whom the young man was in the habit of working, discovered that he had been liable to fits for many years. Without further investigation, therefore, I reported him unfit for service, by which he obtained his discharge.

We must ascertain the circumstances under which the fits first commenced. If the disease arose from horror or apprehension, or after the sudden suppression of a cutaneous eruption, or a habitual discharge; if from indigestion or a debauch, or if others of the same family have been epileptic, the probability in favour of a genuine disease will be increased.

Farther, we must ascertain whether to the paroxysms of convulsion there are premonitory symptoms, such as the aura epileptica, vertigo, drowsiness, headach, or other proof of determination of blood to the head, as flushing, or congestion in the blood vessels of the head or neck; whether it is preceded by nausea or vomiting, by false perceptions, flashes of light or fire, visual objects confusedly intermingled; colours of different kinds dancing before the eyes; discordant noises heard; strong or disagreeable smells perceived; numbness or weakness of particular parts of the body felt; loss of

speech or of recollection occurring—these will still more increase the probability of a real disease.

Moreover we must carefully observe the course of the paroxysm. Does it begin with a scream? are the pupils contractile? Are secretions increased; for instance, does saliva work its way from the mouth, or is bile vomited? Are there involuntary discharges of fæces, urine or semen, the latter attended with priapism? We must carefully examine the tongue, the sides of which, in true epilepsy, appear to be gnawed as it were, sometimes it is severely bitten, while in the feigned disease it is scarcely ever injured.

When the fits are not genuine they generally recur at short intervals, and at such times as not to escape observation.

Finally, we must carefully observe the subsiding of the attack. Does it end in profound sleep? Is it productive of extravasation; petechial spots, lividity of the nails? Does it usher in a maniacal state, or alternate with catalepsy, hysteria, or a sub-epileptic attack, and ultimately lead to paralysis or fatuity? It is obvious that the more we know of disease by reading and observation, the more patience and temper we possess, the more successful shall we be in the detection of imposture. I am convinced that simulated disease will soonest be discovered by those who con-

duct the inquiry in the most scientific manner, carefully applying the case in doubt to the description of the disease in standard works on pathology.

When a suspicion is strongly excited that a soldier has been feigning epilepsy, various means have been employed to put an end to the deception, such as applying a hot poker to the ear or hip; putting snuff, Cayenne pepper, or hartshorn, up the nose; plunging the individual into a cold bath; drenching him with cold water, as in the following instance related by Mr. Young, surgeon to the 10th. "Private Hugh Cunningham, of the 71st regiment, on that regiment embarking for America, contrived to be left behind in the General Hospital at Fermoy, but was soon discharged by Dr. Baird, the assistant surgeon to the 10th, who saw that he was a pretender. When he had been in barracks for a few days, he affected to have a severe fit. Before he was seen by a medical officer, his wife sent for a priest, who declared that her husband was under the influence of a devil, and could be relieved only by spiritual means. The surgeon of the 10th thought differently; and as the patient continued to toss about with violence, gnashing his teeth, &c. a large barrack table was put upon another of the same dimensions, the pretender was placed on the upper table, on which, after lying quietly for a little time, he begged to be permitted to come down, but this was not allowed till he was well drenched

with cold water ; this put an end to his fits while he remained in Fermoy."

I apprehend the most effectual method of exposing the feigning epileptic is by an expedient suggested by Staff Surgeon Eagle, which I have employed with success in the King's Infirmary in the following instance. A man, who was suspected to be a malingerer, was reported to be in strong convulsions ; upon which a young gentleman, a Dresser in the surgical side, being instructed by me, quickly attended, and by means of a quill, cut so as to contain a few drops of liquid, introduced into the eye a portion of spirits,—one of the shop tinctures : this producing insupportable pain, caused the malingerer suddenly to turn from the operator, who ordered the men who were holding him to leave him to himself ; by these means he was so disconcerted, that he desisted at once from his contortions, to the great amusement of his comrades ; and, on the next day, he was sent to his regiment with a report of the particulars of the cure.

I am in possession of evidence sufficient to prove, that real epilepsy has often been considered feigned. There is a description of epilepsy in young men which seems to be a variety of hysteria. There is also a form of the disease in which we may discover its connexion with catalepsy or extasis ; these affections are so uncommon that physicians, even of some experience,

are often but imperfectly acquainted with them, and consequently they can scarcely be supposed liable to be imitated by the malingerer. I rather think the following case, related by Mr. Parker, surgeon to the 19th, is of this nature. A recruit who joined the 19th at Weedon, was considered as pretending to be epileptic, for the purpose of obtaining his discharge. By his own statement his fits were originally brought on by a fright occasioned by confinement in a dark cellar. When seized he would stand trembling, his eyes fixed in an unconscious stare; his urine would flow from him; in this state, from which nothing could rouse him, he would remain for about five minutes, and then fall down with a scream, after which he gradually recovered his senses. Being a man of bad character, Mr. P. thought that he was pretending, and advised his being kept strictly at drill, but all means which were employed to conquer his supposed obstinacy were in vain. He remained a year and half in the regiment, during the last six months of which period the opinion of Mr. P. underwent a change. Pinching him, or running pins into him never induced him to alter his position, or move a muscle; at last Mr. P. being convinced that the fits, though not severe, were real, recommended him to be discharged.

INSANITY. As the physician who has not had extensive opportunities of witnessing insanity is liable to be imposed upon by the pretending ma-

niac, and as it is extremely difficult to feign insanity, so as to deceive those who are familiar with the phenomena of mental disease, it would appear desirable that no decision upon a doubtful case should take place without obtaining the opinion of a medical practitioner, whose attention has been particularly directed to the subject of deranged mind.

As we are in more danger of supposing insanity simulated when it is real, than of considering that disease to be real when it is only pretended, I would observe that there are circumstances belonging to genuine insanity which no plan of deception, however artful, will embrace; and hence a systematic inquiry into the history of every doubtful case ought on no account to be dispensed with: for example, information of a very decisive kind may be elicited by the following queries:—Has insanity occurred in other individuals of the family to which the suspected person belongs? Has he sustained any injury of the head, or been affected with fever attended with delirium, or with epilepsy? Has any cutaneous eruption suddenly been repelled? Has he been engaged in a protracted course of dissipation? Has he been recently under the influence of mercury? Has his mind been overwrought? Has any occurrence calculated to excite or depress his mind lately taken place? Has there been an observable change in the character and habits of the maniac, before

any overt act of insanity was committed? Has he evinced a restless and vagrant disposition, a vivacity of conception, or play of fancy which was not natural to him, an irritability of temper leading him to quarrel with all around, or a loss of that moral restraint which had hitherto governed his conduct, and a consequent attempt to perpetrate crimes which no convenience of opportunity could previously have betrayed him into?

Then there is a peculiarity in the way in which complete mental derangement takes place, which could scarcely be feigned. There is a launching into extravagance or debauchery, an absurd assumption of consequence, an imagining of combinations and plots entered into by the most improbable agents, to involve the maniac and his friends in ruin; there are whisperings and mutterings heard, men, or devils peeping at, and conspiring to disturb him.

Moreover, there is often in the nature of the paroxysm something which is inimitable, for example, an astonishing power of stringing rhymes together. I have known a maniac who had never attempted to rhyme, while in his sound senses, fill a quire of paper with doggrel in an incredibly short space of time; this he recited in a most impassioned manner, and with as much delight as a poet might be supposed to take in reading his happiest composition. There are also

some links, slender and indistinct, which connect the ravings of a maniac, in a way which a careless observer could scarcely discover, and which a pretender to madness could never feign. Thus if we present the same subject to the mind of a maniac, after a considerable interval of time, the same concatenation of incoherent raving may be distinguished.

The conduct of the maniac is sometimes governed by trifling occurrences which take place under the eye of the attendants, which would have no weight with a sane person. A lunatic who had received a letter written by one of his malicious comrades, recommending an absurd scheme of speedy aggrandisement, acted upon the suggestion contained in the letter, all the while he remained in the Infirmary. During maniacal paroxysms there is often the greatest insensibility to decency, propriety and comfort, which appears in exposure of the person, spitting all over the cell, wetting the bed, plastering the wall with ordure, raving, and muttering for days and nights when no one could be supposed to be listening. Such peculiarities, with the treacherous expression and glancing eye of the maniac, may often enable a patient observer to pronounce disease real, which, at first sight, might have been thought by him fictitious.

HÆMOPTOE AND PHTHISIS.—Hæmoptoe is rather a favourite disease with soldiers who wish to obtain their discharge. I have detected several

in the execution of their fraudulent attempt who who pretended that they were affected with spitting of blood. The absence of those symptoms which generally attend hæmoptoe, such as imperfect formation of the chest, cough, dyspnœa, disturbed circulation and hectic flushing, will naturally excite suspicion, which will be confirmed by the appearance of the blood which is presented in the spitting cup, and by minute examination of the mouth and such parts of the body as are within reach of suction. Blood from the lungs is generally florid, frothy, coagulated, and in separate masses; whereas in the attempts which are made to imitate hæmoptoe, it will be found to resemble, what in fact it is, blood mixed with, or dissolved in saliva, being of a thin ropy consistence, and dilute colour. This appearance ought to lead to an examination of the naked body, of the nostrils, fauces, inside of the cheeks, but most especially the gums, in a good clear light. If we discover blood adhering to the nostrils or fauces, or if, in examining the gums carefully, we are able, at any point, to express blood from between the gums and tooth, we may, without hesitation, send the pretended patient to his duty.

The soldier not content with representing one feature of consumption, will often undertake a perfect portrait of that disease, and this he will sometimes execute with great cleverness. The thought would seem to strike him while in hos-

pital, under treatment for catarrh, or recovering from fever accompanied with pulmonary irritation. His cure, all at once, seems suspended; his food, he says, *stuffs* him, and he begs to be replaced on spoon or milk diet; he coughs much at the period of the daily visit; he suppresses his cough for some time previously, so that if there is any defluxion it may be expectorated at that period. He expresses a wish to be let blood, or blistered, for a pain in his chest; begs for some medicine to relieve his cough; applies for a furlough; in short, so well does he act his part, that unless the surgeon is very circumspect, he will discover, when too late, that he has been made a dupe of.

Much discrimination is often necessary when, to use the language of the military hospital, a soldier is *making the most* of his complaints.—When actual illness is exaggerated by the soldier (who it is possible may think himself unfit for military duty) that he may procure his discharge, and having just accomplished a certain term of service, obtain a pension also; he will now make a display of his sufferings, and heighten the expression of disease in such a way as to show that he has been a close student of symptomatology. It is impossible to establish rules for such cases. Accurate knowledge of disease will lead to a proper decision, provided we look simply to the good of the service. On the one hand, we must not, by negligence, encourage a general belief that a dis-

charge from the service may be obtained on easy terms, otherwise the hospital will soon be filled with malingerers. On one occasion, some years ago, the imperfect stamina of a considerable portion of the men of a very distinguished corps, rendered it necessary to discharge all whose constitutions were unsound; the consequence of which was, that a general opinion soon prevailed in the garrison of Dublin, that any man who could prove that his health was imperfect, or his frame not robust, would be discharged, and hence the wards of the King's Infirmary, for several months after, contained an extraordinary number of malingerers. On the other hand, disregarding all sneers, all insinuations that we have allowed ourselves to be outwitted, we must recollect that, by the discharge of those who have been long in the service, and who on every slight pretext throw themselves into hospital, giving an exaggerated account of their sufferings, and resisting the endeavours of the surgeon to send them back to their duty, we contribute most materially to the efficiency of a corps.

One of the most important parts of my duty at the King's Infirmary is to watch the convalescents from fever, that I may early detect those symptoms which, in the predisposed, often end in consumption. When recovery from fever is interrupted or tardy, in young men who, with an imperfect formation of the chest, have not attained a full expansion of that part of the body, it behoves us to be vigilant and prompt; if we over-

look the shadow of the coming disease, waiting till it manifests itself, our opportunity of saving the patient's life will have been unhappily lost.

Notwithstanding the strictness of the regulations which apply to the passing of recruits, I have frequently observed an imperfect formation of the chest in soldiers under my care in the King's Infirmary. When the number of deaths in the army from phthisis is considered, which exceeds one third of the whole, (if we take into account those who die of consumption after they are invalided, I am persuaded that the mortality from that disease in Ireland is nearly one half,) and when it is considered that in a large proportion of those who fall victims to consumption, the chest is narrow and contracted, and that a soldier's habits and duties tend to rouse that disease, the officer who has to pass recruits ought to be led by a motive more powerful even than the command of his superiors, to reject every recruit whose chest is not well formed. Moreover, if by the use of the stethoscope, latent disease of the lungs and heart can be detected with certainty, no young man, whose chest is in the slightest degree objectionable in point of form, ought to be approved of until he has been subject to mediate auscultation, to which percussion of the thorax ought to be added. The stethoscope would also appear applicable to those persons in hospital who are simulating pulmonary consumption, or organic disease of the heart.

Return of the Deaths, with the causes thereof, which occurred in the army serving in Ireland, from 1st January, 1818, to 1st October, 1826.

	Dropsy.	Fever.	Dysentery.	Inflammation of the bowels.	Suicide.	Sudden deaths, Apoplexy, &c.	Consumption.	Small pox.	Measles.	Accidents.	Old Venereals.	Liver disease.	Abscess.	Disease of the Heart.	Disease not stated.	Total number of deaths in monthly sick reports.
1818	7	60	21	1	4	5	108	6	4	11	2	4	2	1		236
1819	5	43	12		1	6	79	1		15	1	11	3		2	177
1820	10	51	19	1	1	4	92	2		14	1	10	3	4		214
1821	12	44	21	6	3	6	74	8		9	6	12	1	6		208
1822	10	48	13	11	1	9	81	1		13	3	17	6	5	1	219
1823	12	54	9	4	4	5	96	7		9	5	15	3	2	3	228
1824	12	63	10	9	3	13	111	1	1	3	3	10	3	4		246
1825	6	70	35	4	5	9	112	6		11	1	15	1	1		276
To 1st Oct. 1826	13	93	38	9	1	8	135	3		2	7	11	2	1		323
	87	526	178	45	23	5	888	35	5	87	29	105	24	24	6	2127

PALPITATION. I have frequently counted a soldier's pulse on going into a ward at the expected time of visiting, and found it 120 or 130, and in a quarter of an hour after I have come upon him unawares, and found the pulse lower by 30 or 40 beats. I am convinced that many soldiers have a power of quickening their pulse, and giving violence to the heart's pulsation, but I have not been able to discover by what means. Thus far had I written when Mr. Hutchison's paper on feigned diseases reached me, in which a method of effectuating excessive palpitation by means of white hellebore, has been exposed. Instead therefore of expatiating on this subject, I beg to refer the reader to Mr. Hutchison's interesting work,* in which he will find that sailors are equally with soldiers proficient in those frauds which so disgrace the hospitals in both services.

VOMITING. Many persons possess the power of discharging at will the contents of the stomach, without sickness. This is effected by forcing air into the stomach, and then, by eructating, part of the contents of the stomach is brought up along with the returned air. This is accomplished with great ease after a meal, hence the food being

* Practical Observations on Surgery, by A. C. Hutchison, Esq. I am persuaded that soldiers have other means of effecting their purpose. Some probably have a voluntary power of increasing the pulsation of the heart; others use more manageable stimulants than hellebore.

vomited in an undigested form, is always a cause of suspicion. When vomiting takes place at stated periods the party ought to be watched. Mr. Hutchison describes a case in which a malingerer could produce vomiting by making violent pressure with his hand on the region of the stomach. The contents of the stomach ought also to be carefully inspected; if in these there is no mixture of mucus or bile, if no tumour can be felt in the abdomen, if the patient continues to eat his meals, and although pale, does not become emaciated, the case may well inspire doubt in the surgeon's mind of its reality.

It may be useful to the reader to give an outline of two cases of vomiting which occurred to me shortly after I became Physician General; they will exemplify the twofold danger we incur of being deceived by the guilty, and of unjustly suspecting the innocent. These cases led me to bestow more attention than I otherwise might have done on the subject of this paper. A serjeant of infantry, a young man of good character, and open and intelligent countenance, was admitted into the King's Infirmary, for a complaint in his stomach, which he described as intolerant of food, being uneasy as soon as he had swallowed any kind of nutriment, and becoming more and more so until the food was again returned by vomiting. He had a pale and delicate aspect, but was not emaciated; he had been complaining

for two or three years, and he was considered in his regiment as burdensome to the corps, from the frequent recurrence of his fits of illness. After a course of medicine I reported him unfit for service, and he was consequently discharged. My report having been forwarded, and while he was waiting in the hospital for his discharge, he considerably improved in appearance; and in about a fortnight after he had left the Infirmary, I met him in Barrack-street in the vigour of health. I have no doubt that this man had the power possessed by many of disgorging his food, without any accompanying sickness; that he probably swallowed small quantities of tobacco juice, or introduced a portion of that herb into the rectum, by which he caused a delicacy of appearance; in short that he was an accomplished impostor. Much about the same time a lad, who had been recently enlisted, was sent into the Infirmary with a similar complaint; he was not emaciated, but his skin appeared dirty and opake, his pulse was slow, and he complained of an uneasy stomach and constant vomiting; he obtained relief while in hospital, and was sent to his duty, but he returned to the Infirmary in a few days with the same complaint. Being a lounging slovenly boy, without the stamina which a soldier requires, and still complaining of vomiting, and looking sickly and miserable, I recommended him to be discharged, and his discharge took place in due course. Shortly afterwards, being destitute, he

threw himself on the establishment, wherein he died in a few days. His body was examined after death, and the stomach was found extensively diseased, the mucous membrane being every where varicose and pulpy. In neither of these cases had I formed a correct judgment; the knave accomplished his purpose, while the poor suffering boy was treated with unjust suspicion. I am happy however to say, that although for a considerable time he was thought to be a malingerer, he was not treated with any severity.

TYMPANY. In Staff Surgeon Marshall's valuable observations on feigned disease, just published in the 89th number of the Edinburgh Medical and Surgical Journal, he mentions a person who having the power of greatly distending his belly by swallowing air, had thus deceived a board of French medical officers, and thereby obtained an unqualified exemption from military service. *Physconia* Mr. Marshall says is sometimes simulated in India, which he conceives is effected by swallowing large quantities of congee-toddy with a little soap. Many attempts have been made by soldiers to deceive me in this way, but the trick is now too well known in the infirmary to succeed. In the year 1811, as I learn from Dr. O'Hara, Apothecary to the forces, a considerable number of patients, from thirty to forty, belonging to the 2d Battalion of the 84th Regiment, were admitted into the King's Infirmary, labouring, as stated in

the admission ticket, under dropsy and intermittent fever. On examination, the abdomen was found greatly distended, and felt tympanitic; the tongue, with few exceptions, was clean, pulse regular, urine natural, and bowels in general costive. These men complained of pain in the right side, and many of them of pain over the whole abdomen, with excessive thirst,—drinking more than a gallon of water daily. The disease was at first considered a consequence of the Walcheren fever, but from the numbers increasing, and all with the same symptoms, Dr. Harvey was led to conclude that the complaint was feigned. Under that impression he prescribed a solution of glauber salts in weak tobacco water, which he called the *Infusum Benedictum*; a cupful of this detestable compound was given in the morning, and repeated every fourth hour till it operated, and with perfect success; all who were in hospital recovered speedily, and the disease, which was becoming epidemical, soon disappeared; however, sixteen of the number had succeeded in obtaining their discharge, before this method of treatment was discovered.

Two questions naturally occur relative to the production of this form of tympany. First, in what part of the intestinal tube is the air arrested; and secondly, how is the distension produced. The air must be either in the stomach or in the colon. If in either intestine it might easily be

dislodged by the introduction of an elastic tube into the stomach first, and then up the rectum. If in the stomach, the air is probably swallowed, which many can do without difficulty. It was reported that the men of the 84th produced the distension by swallowing large quantities of chalk and vinegar. Mr. Bamfield, surgeon of the 35th, relates that "he has seen three cases of impostors feigning enlargement of the abdomen, with tension and diseased viscera, which was done by their protruding the abdomen by means of a deep inspiration, in which the diaphragm pressed the abdomen downwards and forwards, then the abdomen was kept so distended by means of very short expirations. The detection" he continues, "was simple and easy, as it was only necessary to surprize the patient while asleep, when his abdomen was soft and unprotruded."

DYSENTERY is sometimes feigned by introducing irritating substances into the rectum, and thereby procuring mucous discharges, in the execution of which men have been detected in the King's Infirmary. Dr. Hennen informs us that men who laboured under dysentery during the Peninsular war often affected its continuance, in order to escape duty, and enjoy the indulgence of the hospital. They bribed the orderlies to exchange their bedpans with those of patients in the advanced stage of the disease, which they showed as containing specimens of their own alvine dis-

charge. By introducing a soap suppository into the rectum, and retaining it there, a mucous discharge may at any time be procured, which could easily be rendered bloody. In the army the simulators of dysentery have merely a temporary object in view, such as the evasion of some particular duty, and hence as those who practise upon *my* credulity do so with a view of being discharged from the army, I have never seen but one instance of this species of imposition ; but as Mr. Hutchison tells us that he has often known sailors affected with diarrhoea and dysentery brought on by their own contrivance in order to obtain invaliding, and that he has witnessed, not unfrequently, men falling a sacrifice to complaints of the bowels, induced by various means, but chiefly by a mixture of vinegar and burnt cork, to the use of which substances some of the finest young men in the navy have fallen victims, it becomes us to keep in mind that factitious dysentery may take place in the military as well as in the naval hospital.

CHRONIC HEPATITIS, with the symptoms of which all soldiers who have served in the East Indies are accurately acquainted, is a disease which I have often known to be feigned. When tired of a military life, some of these men feign chronic hepatitis, while others merely exaggerate their sufferings from a disease with which they are actually affected. A majority of Europeans who have spent ten or twelve years in India,

labour under this disease, which is aggravated by atmospheric changes, and then they generally are candidates for the hospital: their names are never long absent from the sick list, in which case they ought to be reported unfit for service. On the other hand, when men who have not been in warm climates obstinately complain of pain in the right hypochondrium, and when we cannot discover any enlargement or fulness in the region of the liver, when the pulse and breathing are undisturbed, the secretions and excretions natural, and when the alleged pain resists topical bleeding and blistering and mercurial purgatives, the sooner we send them to duty the better.

We ought never to put a malingerer under a course of mercury, as by the requisite stay in hospital he will not only be enabled to mature his plans of villany, but his constitution will be thereby injured; if forced to return to his duty, after being salivated, he will soon be again in hospital, asserting that the pain in his side returned as soon as his mouth got well; a new course of mercury will then be instituted, which is precisely what he wishes for. This goes on till the surgeon becomes tired of his patient, or until, upon the quarters of the regiment being changed, the latter is transmitted into a general hospital, where he will present himself with an abstract of his case.—
“CHRONIC HEPATITIS, of some months or years standing, remedies,—blood-letting, blistering, sali-

vated once, twice, or thrice, with temporary benefit. Nitro-muriatic acid baths ; disease unsubdued." Such subjects have often come under my care ; their flesh and strength being reduced by repeated courses of mercury, their gums absorbed, and teeth shaking in the sockets, whose livers were sound, probably they never were otherwise, but whose broken health required that they should be invalided without delay.

Perhaps I may be permitted to remark that the present treatment, adopted by many civil as well as military practitioners of medicine, for the cure of supposed liver complaints, or even of actual liver complaints of a slight kind, is sometimes productive of very sad consequences. Many a course of mercury is undergone, to the indescribable discomfort of the patient, for pains seated in the intestines, in the duodenum or colon, perhaps in the biliary ducts, or even in the liver itself, which would have yielded to cupping, blistering, common purgatives and a change of regimen. Thus, for example, there is a pain in the right hypochondrium which belongs to hysteria, which will yield to aloetic purgatives, the belladonna plaister, to infusion of valerian and snake root with ammonia, change of residence, exercise in an open carriage or on horseback, and light animal food without wine, which has entailed on many a sufferer, not one, but repeated courses of mercury, each in succession tending more and more to confirm the

pain, till at last by these means the comforts and prospects of the patient have been utterly destroyed. Moreover, a great proportion of the cases of dyspepsia, which are generally treated on what is called Mr. Abernethy's plan, may be removed, with equal certainty, without giving a grain of mercury, by means of a pill every second evening containing aloes if it agrees, if not a pill which will act slowly and moderately, a draught before meals containing some bitter infusion with an alkali, or some nervous medicine, carminative or chalybeate, according to the case, appropriate diet and regimen, and change of residence. My opportunity of observing most of the varieties of disordered digestion, and my experience in treating them without mercury, leads me to protest against the present routine of practice in these cases.

FEVER. A soldier whom I had discharged from the infirmary, where he had been feigning disease of the lungs, was sent back shortly after his discharge according to the admission ticket, "in fever." He acted his part remarkably well; he still complained of pain in his chest, and had a dry white tongue; the tongue was so dry and white that I ordered him to wash his mouth with tepid water, which left his tongue, which he had prepared for me by rubbing it with whiting from the wall, perfectly clean and moist. I forthwith sent him to his regiment and never saw him again.

A soldier who had been in the country on fur-

lough was sent into the Infirmary ; in his ticket he was said to labour under " Hæmoptysis and intermittent fever : " the appearance of the blood which he presented to me on the day after his admission, led me to think that he was an impostor, and I conveyed my suspicion to one of the resident medical officers, who, next day, met me as I was going into the fever hospital, and told me that I might see the patient in a paroxysm of intermittent fever, for he had just seen him in the *chill*. Without delay I went to see him, and found him shaking violently. I had the bed clothes thrown down, and upon exposing his person, I found him not in the cold, but in a sweating stage, produced by his exertions, which was pointed out to the bystanders ; this exposure had the effect of bringing the paroxysm to an immediate close. This man also returned to his duty without making the slightest objection.

CHRONIC RHEUMATISM. This is the disease most generally feigned by soldiers, and it is of all diseases the most difficult of detection. Chronic rheumatism is distinguished by some disorder of the digestive organs, impaired appetite, white tongue, a look of delicacy, a degree of pyrexia in the evening, yielding in the latter part of the night or early in the morning in perspiration. Some emaciation, wasting of the muscles of the affected limb, fullness of the veins, and puffy enlargement of the affected joint. There is in general

an increase of the temperature of the affected part. These symptoms often occur after exposure to cold, after fever, acute rheumatism, or the use of mercury. They are much influenced by the state of the weather, and they yield, at least in part, to proper treatment; whereas those who feign this disease usually retain their appetite and looks; they have no diurnal return of fever, and have no inflammatory symptoms, such as vascular turgescence, swelling, or increased temperature. They give a glowing account of their sufferings, alleging that they have *entirely* lost the use of the part affected, which seldom happens in genuine rheumatism. There is for the most part no adequate cause assigned for the complaint, no relief from remedial treatment is acknowledged, and while, as Dr. Hennen observes, real rheumatic affections are aggravated by damp, the impostor complains equally at all times.

The treatment applicable to chronic rheumatism will, if persevered in, sometimes remove the simulated disease: local bleeding, blistering, tartar emetic ointment, low diet, purgatives, emetics in the evening, antimonial diaphoretics, and electricity. These however will sometimes fail, and it will then be necessary to report the case to the commanding officer, whose treatment will sometimes effect a cure when that of the surgeon has failed, as appears in the following case, related by Mr. White, surgeon to the 84th regiment. Stephen M'Can, a soldier of the 27th regiment,

who pretended that he laboured under rheumatism, after persevering for four months bent nearly double, was at last tried by a court martial, convicted of malingering, and sentenced to receive 300 lashes. 150 lashes were inflicted without effect, he obstinately declaring his utter inability to stand erect. However, when he was ordered out to receive the remainder of his punishment, he requested to see Mr. W. and entreated his intercession with the commanding officer; he begged for three or four days indulgence from parade, when, he said, he would turn out a clean and clever soldier. The commanding officer having ordered him to be released, at the expiration of the time specified, he appeared on the parade as straight as any man in the regiment: he confessed his imposition, promised to be a good soldier in future, afterwards went on service with the regiment, and conducted himself so as to give satisfaction to his officers.

Dropsy. The only form of dropsy feigned by soldiers is anasarca of the inferior extremities. When this affection exists without any other symptom of disease, the patient must be stript to the waist to ascertain that there is no mark of ligature either above or below the knees. Sometimes the swelling is produced by tightening the strings of the drawers. He ought also to be examined for the same purpose while he is in bed, especially in the morning. Staff Surgeon Ormsby relates the case of a private of the 19th, who was left be-

hind that regiment, as, he said, he was unable to walk, in consequence of his legs swelling every night; his general appearance was healthy. After a few nights the hospital serjeant visited the wards at a late hour when the soldier was asleep, and, on lifting up the bed-clothes, the cause of the swellings was discovered, tight ligatures being found under the knees, obstructing the circulation of both limbs.

I shall now conclude this report with a recapitulation of such rules as seem calculated to divest this most unpleasant duty of all harshness and unnecessary responsibility. The wiles of soldiers in hospital, let me again repeat, will be with more certainty discovered by those who have an accurate knowledge of disease obtained from clinical observation and pathological writings of authority, than by those possessing natural sagacity, in the highest degree, if unassisted by a habit of carefully contemplating and studying disease.

1st. The medical officer must not allow even flagrant imposition to deprive him of the command of his temper; he must listen to the most contradictory statement, not merely with patience, but without evincing the slightest distrust; in short his manner must be the same to a soldier labouring under strong suspicion of fraud, as it would be to the best man in the regiment, and he will in general find that complete ignorance of

his sentiments will, more than any thing, disconcert the malingerer.

2dly, If the case is evidently feigned, he ought to take the malingerer aside, mildly expostulate with him on his folly, or, if necessary, threaten to report him to the commanding officer if he should persist in his misconduct, or again attempt to feign sickness. By such means many a good soldier has been reclaimed, who, had he been exposed to shame, would have become a callous profligate.

3dly, If he should fail by means of persuasion, and if the fraud be palpable, he ought to take the malingerer into hospital, and without prescribing for his pretended complaints, lay the case before the commanding officer.

4thly, But if the grounds of his suspicion cannot be convincingly stated, he must cautiously conceal his sentiments, until by patient investigation his doubts are removed, and a satisfactory report of the case can be prepared.

5thly, In this stage of the inquiry, he must employ no means but such as would be applicable to the case were it genuine. He must not, on his own authority, employ any coercive or penal measures, not even irritating applications, nauseating

medicines, nor spare diet, unless such would be proper were the disease real.

6thly, When, after the calmest inquiry, he is convinced that the complaint is unfounded, or the disease fabricated, and shall have reported accordingly to the commanding officer, the case is no longer in his hands; he ought not to prescribe for the malingerer, but ought to pass him in going through the wards. Neglect will often bring him to resume his duty. The commanding officer, if he be a judicious man, and repose confidence in the surgeon, will take the advice of the latter relative to the treatment of the malingerer, and will authorise any measures which medical experience may suggest. Restraint or punishment in hospital, under the sanction of the commanding officer, may, in some cases, be useful.

7thly, If the malingerer should still persevere in a course of imposition, it is customary to bring him before a court martial. It would appear to me that a medical board, consisting of at least three medical officers of mature experience, would be found the better tribunal in the first instance. If the medical board should report favourably of the accused, he will be discharged from the service, and the corps relieved of a clog; if unfavourably, he must then abide the sentence of a court-martial.

To suppress malingering is an important part

of the discipline of a corps, in which the surgeon must assist to the utmost of his ability ; his conduct, however, must be guided by just principles. He must avoid all harsh, arbitrary, and unauthorized proceedings. After having stated his opinion, and the grounds of it, and given his advice when required to do so, the case is no longer in his hands ; all further measures must originate with the commanding officer, with whom the responsibility of these ought solely to rest.

I have the honour to be,

Sir,

Your most obedient servant,

J. CHEYNE.

PART II.

MISCELLANEOUS COMMUNICATIONS

ON

MEDICAL AND SURGICAL DISEASES.

CASES
OF THE
EXCISION OF CARIOUS JOINTS,

BY
PHILIP CRAMPTON, F. R. S.

SURGEON GENERAL TO THE FORCES IN IRELAND, AND
SURGEON IN ORDINARY TO THE KING.

THE success which in many cases of compound dislocation of the Shoulder, Elbow, and Ankle joints, attended the removal of the protruding extremity of the dislocated bone, led Mr. Park, of Liverpool, to entertain the original idea, that in certain diseases of the joints the excision of the carious extremities of the bones might be attended with similar advantage.

Accordingly, in a case of scrophulous disease of the knee, (commonly called white swelling) Mr. Park extirpated the whole of the joint, "removing somewhat, though not much more than two

inches of the femur, and of the tibia rather more than an inch.”* The operation (which was performed on the 2d of July, 1781, in the Liverpool Infirmary, was attended with the most complete success. “The man lived to make several voyages to sea; he was able to go aloft with considerable agility, and to perform all the duties of a seaman; he was twice shipwrecked, and suffered great hardships, without feeling any further complaint in the limb, and was at last unfortunately drowned by the oversetting of a float in the river Mersey.”†

A few years after the appearance of Mr. Park's pamphlet, Mr. P. F. Moreau published his valuable “Cases of Excision of Carious Joints.” It appears that in the year 1782, (about a year after Mr. Park's publication) Mr. Moreau (the father) in a memoir presented to the Academy of Surgery of Paris, proposed the excision of the carious joint as an operation which, under certain circumstances, might be advantageously substituted for amputation.

In the year 1786 he communicated to the Academy “an account of an operation in which he removed the head of the humerus and the corresponding glenoid cavity of the scapula, which were carious.” “In 1789, he addressed to the same so-

* Park, page 22.

† Ibid. page 57.

ciety a memoir explaining his new method of treating carious joints ;" this essay, (says his son) though supported by many facts, met with the most violent opposition ; it was found more convenient to deny than to examine the facts on which it was grounded. " This, however," he adds, " did not discourage my father, nor did it stop him in his career. Accordingly, " on the 17th of Sept. 1792, he removed the whole of a carious knee joint from the son of Mr. Clause, apothecary at Chalons-sur-Marne, in the presence of Mr. (now) the Baron Percy, surgeon general to the army of Kellerman, of Mr. Chamerlat, his colleague, and of several other eminent surgeons, both civil and military." The operation seems to have been attended with success, for " three months and a half afterwards the wound was healed, and the limb had acquired a considerable degree of firmness ; but the Prussians, in retiring from the French territory, left behind them an epidemic dysentery, which, as is well known, carried off the greater part of those who were attacked by it. It got into the hospital at Bar, of which I had the charge, and was communicated to my patient ; he could not bear up against it, and, on the 15th day he died, just three months and a half after the operation."

M. Moreau proceeds to relate several other cases in which the operation of removing the shoulder, elbow, and ankle joints was performed, with complete success, by his father, by Baron

have attended the removal of the extremities of the long bones when they have been protruded through the soft parts in compound dislocations, to say nothing of the cases of excision of carious joints recorded by White, Bent, and Orred. Both the articulating extremities of the Humerus,* the head of the os Femoris,† the lower extremities of the Tibia and Fibula, together with the Astragalus,‡ have been removed with complete success, and this too under circumstances the least favourable for the success of such operations.

These were the grounds on which I thought myself justified in reviving the operation of Mr. Park. The following cases will show how far the expectations which I had formed as to the benefits to be derived from the practice have been realized.

* White's Cases in Surgery.

† By Wm. White of the Westminster Hospital.

‡ Sir A. Cooper and M. Dupuytren. Sir A. Cooper's testimony in favour of the safety and advantage of removing the extremity of the tibia and fibula in compound dislocation of the ankle joint, is perhaps the strongest that ever was offered in favour of any important operation. "I have known no case of death (says this most experienced and able surgeon) when the extremities of the bones have been sawn off, although I shall have occasion to mention some in which the cases terminated fatally when this had not been done."—*Treatise on Dislocations*, page 276.

CASE I.

Alexander Gordon, 90th regiment, aged 23, was admitted into the Royal Infirmary, Phoenix Park, Dublin, on the 2d of January, 1823. To avoid the description of appearances, with which every medical man is but too familiar, it may perhaps be sufficient to state, that it would be difficult to find an individual in whom the "scrophulous aspect" was more distinctly marked. He was sent to the General Hospital on account of true scrophulous white swelling of the right elbow joint. The disease was of about ten months standing; the swelling extended at least a hand's breadth above and below the joint; suppuration had taken place over the inner condyle of the humerus, and the opening had degenerated into a large and irregular ulcer, at the bottom of which the bone could be felt in a state of caries. The man's general health was much impaired, his pulse was 120, and feeble; he had night perspirations, and, in a word, was far advanced in hectic fever. It was determined in consultation that the only chance of preserving his life was by sacrificing the limb, and he was sent into the General Hospital in order that the operation might be performed. I thought this was a fair case for performing Mr. Park's operation, and having obtained the man's consent, (who declared "that he would willingly

suffer any pain or risk for the chance of saving his right arm,"") the operation was performed on the 4th of Feb. in the presence of the greater number of the principal surgeons, both civil and military, of Dublin. The patient was placed (as recommended by M. Moreau) upon his belly on a table covered with a mattress, and pillows so arranged as to make his posture as little inconvenient as possible; the diseased arm hung over the edge of the table, presenting its posterior and inner surface to the operator; the brachial artery being compressed by an assistant, an incision was now made along the spine of the inner condyle, commencing about four inches above, and terminating about two inches below, its tuberosity. This incision passed through the centre of the ulceration, and laid bare the ulnar nerve, which was carefully raised from its groove, and drawn to the inner side of the incision.† A similar incision, parallel to the first, was made on the outer side of the humerus, and then a transverse section, which cut through the tendon of the triceps muscle, immediately above its insertion into the olecranon, connected the two longitudinal incisions, so that the wound represented pretty accurately the letter H; the lateral incisions, however, being slightly incurvated, so as to follow the bend which the fore-arm made with the arm. The

† From neglecting this precaution in M. Moreau's case, the ulnar nerve was cut across, and the ring and little finger were deprived of the powers of motion.

upper flap, consisting of the lower extremity of the triceps muscle, the thickened and diseased cellular substance, and integuments, was raised from the flat surface of the humerus, to which it had a very slight attachment; the lower flap was separated in the same manner, so as to lay bare the upper extremity of the ulna and radius; the scalpel laid on its flat was now pushed between the flexor muscles and the bone on its anterior surface, at the distance of three inches above the tuberosity of the inner condyle, and retained in this situation by an assistant. The saw was then applied, and the bone was divided immediately over the flat surface of the knife which served as a protection to the muscles beneath. The separated portion of the humerus was now raised with the utmost ease by the finger and thumb of the left hand, while the capsular and lateral ligaments, degenerated to the state of a lax cellular substance, were separated by running the knife round the condyles, keeping the edge as closely as possible to the bone.* The lower extremity of the humerus being removed, the articulating surfaces of the radius and ulna were completely exposed; but, with the exception of the cartilage which covers the olecranon, (which was partially eroded,) every thing appeared sound. The olecranon was now removed, and the wound was spunged out; as there was no bleeding which rendered it necessary to have recourse to a ligature, the flaps were laid down, and secured

* See plate VIII.

to each other by four points of suture. The fore-arm was placed at a right angle with the arm; the wound was covered with pledgets of lint wetted with spirits and water, and the man was laid in bed, with the arm supported on a suitable pillow.

He passed the night remarkably well. Suppuration, attended with a very slight degree of symptomatic fever, set in on the fourth day; but, so favourably did every thing proceed, that on the 9th day he sat up in his chair, the arm being supported in a tin case, which I had constructed for the purpose. The wound however was slow in healing, no doubt from the bad constitution of the patient; I sent him therefore to the sea side five weeks after the operation, and there he recovered so rapidly, that on the following week he walked into town to see me, a distance of nearly five miles. He continued to reside at the sea side for three months, walking into town and returning on the same day once a week. On the 18th of September he returned to the King's Infirmary, in order to pass the board of general officers at the Royal Hospital for his discharge. At this time the wound, with the exception of a small superficial ulceration about the place which had been occupied by the inner condyle, was completely closed; the arm, when allowed to hang by the side, retained nearly a semi-flexed position, but by a voluntary effort he was able to give a slight degree of flexion to the fore-arm, so as to lessen

the angle which it formed with the arm. He had the use of the fingers, so as to be able to use his knife and spoon ; and on the 27th of Nov. 1823, *he signed his own discharge with the right hand.* While waiting in the hospital for a party, with which he meant to march to his native county in the north of Ireland, a large abscess began to form on the loins. Before he left the house it had acquired the size of a twopenny loaf: he marched however with the party, and I have heard nothing of him since that time. It is scarcely necessary to observe, that the occurrence of a scrophulous abscess in the loins could have no sort of connection with the operation ; and that so far from throwing any discredit upon it, it seems to shew that, even in a constitution so decidedly bad, the operation may be performed with safety and advantage.

The success which attended this operation naturally led me to extend it to a case of greater difficulty ; accordingly, on the 7th of May 1823, I performed the operation of removing the knee joint in the case of Susan Conolly, a patient in the County of Dublin Infirmary.

The particulars of this case are extracted from the hospital book into which it was entered by the resident pupil.

CASE II.

EXCISION OF THE KNEE JOINT.

Susan Conolly, æt. 23, of a strumous habit and emaciated appearance, marked by several scars of scrophulous ulceration, some of which are still open on the left hand and arm. The right knee is considerably enlarged, of an irregular shape, projecting much to the inner side over the head of the tibia, and measuring three inches and a half more than the sound knee, the surface smooth, white, and shining, but marked by the ramifications of large blue veins. Severe pain much increased by pressure, or by the slightest motion is felt through the joint ; a small ulceration under the inner hamstring discharges a great deal of thin greenish coloured matter ; the joint is permanently contracted, the leg forming a very acute angle with the thigh ; pulse 96, and feeble ; skin rather hot ; tongue white with red edges ; appetite bad ; tendency to diarrhæa ; gets but little rest, from the pain of the limb ; catamenia not present for the last two years. Disease commenced about twelve months ago ; but the contraction of the joint, the severe pain, and the alteration of her health are but of six months standing. The usual treatment had been adopted, but without even temporary relief, for the last six weeks she has had regular attacks of hectic fever, accompanied with profuse

perspirations and diarrhoea, which even opium does not control.

Having stated to my colleagues the grounds on which I proposed to substitute excision of the joint, in this case, for amputation, and obtained their concurrence, I proceeded to perform the operation in the following manner. An incision, commencing about three inches above the outer condyle, and a little below the axis of the femur, was continued to about an inch below the head of the fibula. The acute angle, which the leg formed with the thigh, necessarily gave to this incision the form of a crescent. In making the incision the knife was carried down to the bone; a similar incision was made on the inner side of the joint. The lateral incisions were united by a transverse cut carried below the patella. The flap, thus formed, was raised by a rapid dissection, and the cavity of the joint was completely exposed: for the extent of more than three inches above the condyles the femur was without periosteum, the purulent matter lying in contact with the naked bone. At the point where the periosteum appeared to be united with the bone, the saw was applied, and the bone was divided, the soft parts being protected by a spatula which was passed between the muscles and the bone. The separated portion of the femur was now dissected out, and so slight were its connections with the soft parts that this part of the operation, which I expected would have been attended with

some difficulty, was effected with the greatest ease. The articulating surface of the tibia was now fully exposed ; it was totally deprived of cartilage, and was in a state of caries. By means of a strong and short knife, such as is used by shoe-makers, I was enabled to pare away about half an inch of the head of the tibia, the cancelli of which were loaded with a lardaceous matter, and with pus.

The cavity of this great wound was now sponged out, when upon minutely examining the cut surface of the Femur, I found that the cancelli were diseased and filled with pus, and that posteriorly the periosteum was detached from the bone.* I therefore sawed off about an inch and a quarter more of the femur. On placing the extremities of the femur and tibia in contact, the flap, containing the patella, was found to be about three inches too long, and as the patella itself was totally deprived of its cartilage, and in a state of caries;† the exceeding portion of the flap, including the patella, was removed by a transverse incision. No artery was divided which required the application of a ligature. The flap was retained in its position by two points of the interrupted suture, and compresses wetted in spirits and water were laid over the wound. The limb was now placed in position in one of Assellini's, "carry-

* See plate IX.

† See plate IX.

ing splints" which had previously been carefully adapted to the size and length of the limb, it extended from above the trochanter major on the outside, and from the ramus of the pubis on the inside, to about four inches below the foot, it was supplied with a sole piece, which supported the foot, and was carefully padded with a mixture of baked hair, and wool.

The woman bore the operation, which was by no means tedious, with great fortitude; and indeed, when it is considered that very little muscular structure, and no large nerves or blood-vessels were divided, it is probable that the pain was much less than is attendant upon an amputation of the thigh. However this may be, it is certain that the operation was succeeded by but little constitutional disturbance, and, to the great surprise of every one who witnessed the progress of the case, this great wound united by the first intention, and was healed in less than three weeks. The patient's health continued to amend rapidly until the 12th of September, when she had a rigor which ushered in an attack of Erysipelas that affected the leg and thigh. I may observe (in passing) that Erysipelas was, at that time, prevalent to an unusual degree in the Meath Hospital, and in all the hospitals in Dublin. The Erysipelas, however, was succeeded by abscess, which burst through the

old sinus in the ham, and continued to discharge for three or four weeks, and then healed. The woman's health, which had greatly declined during the formation of this abscess, began to amend as soon as it had ceased to discharge ; and, in the month of November she was able to go about the hospital, the limb being supported by a splint, so constructed that the weight of the body was thrown on the tuberosity of the ischum. No degree of union, however, had taken place between the bones ; and while she remained in hospital she suffered two or three attacks of Erysipelas, much slighter however than the first, but each of which terminated in the formation of matter, which escaped, either through the old sinus, or through a small aperture which was formed in the anterior and upper part of the cicatrix. She was discharged from the hospital on the 27th of June 1824, in very good health ; but no bony union had taken place between the Femur and Tibia. In the winter of 1825-6, hearing that her health had very much declined, and that she was living in great poverty, in a damp cabin in the country, I had her brought up to town, and she was re-admitted into the hospital.

She was now in a wretched state of health ; she had suffered repeated attacks of hæmoptoe, and had cough, with purulent, expectoration, and night sweats. She had no pain in the limb, but there was a general thickening about the joint, as

if the disease had been reproduced, and the sinus in the ham continued to discharge a thin whey coloured matter. By suitable attention her health again rallied, and she returned to the country in the month of May 1826. Shortly after her return I was informed that her health again declined, and that she died some time in the month of July 1826, just three years and two months after the operation.

OBSERVATIONS.

It is plain that this operation, so far at least as related to the preservation of the uses of the limb completely failed. It served to prove, however, in the most satisfactory manner, that the excision, even of so large an Articulation as the knee joint, might be performed with safety, and gave strong grounds to hope that, under more favourable circumstances, the operation might be attended with success.

An examination of the excised joint, which is now deposited in the Museum of the Royal College of Surgeons (marked No. 77),* will at once enable us to explain the cause of the failure of union in this case.

* See plate IX.

It is obvious that the posterior part of the Femur, above the condyles, is in a state of necrosis. It is deprived of periosteum; the walls are as thin as card paper, and the medullary cells are loaded with pus: in a word, the case was one to which the operation of excision was not applicable. The disease had proceeded too far; for, even had it been possible to have removed the whole of the diseased bone, and that union had taken place between the femur and the tibia, the limb, from its shortness, would have been useless. Add to this, that the highly scrophulous constitution of the patient, as evinced by the open sores on the hand, and ultimately by the disease of the lungs, was, in the highest degree unfavorable to the restoration of the healthy action in the constitution, and in the part which was essential to the reunion of the bones.

For nearly four months after the operation, every thing, (at least as far as related to the restoration of the patient's health,) looked as favourably as could be desired. The wound was healed, but no union had taken place between the bones. I was so fully convinced that this was to be accounted for by the bad constitution of the patient, and the diseased state of the bones, that I determined to repeat the operation, in a case where the health was less impaired, and where, from the case being more recent, the disease of the bone was likely to be less extensive. A case of this kind occurred in the month of August, 1823;

and my colleagues shared with me in the hope, which has since been so happily realised, that the operation might here be performed with a reasonable prospect of success.

CASE III.

EXTRACTED FROM THE HOSPITAL BOOK.

Anne Lynch, æt. 22, a strong, and remarkably good-looking country girl, with dark hair blue eyes, and sallow complexion, but presenting no peculiar character of a strumous habit, was admitted into the Meath Hospital, on the 3d of May, 1823. About four years ago, she was seized with a sudden and severe pain in the right arm. The pain soon left the arm and settled in the right knee, which, from that time continued to be, more or less, affected with severe pain, principally confined to the inner condyle. The pain was much increased by pressure on either condyle, by the slightest motion, and by the heat of the bed, at night. The joint became perfectly stiff, and a good deal contracted, so that she could only touch the ground with her toe when standing on the left leg; and the swelling, which for the first few months was inconsiderable, gradually increased, and is now of a very great size, globular in its form, elastic to the touch, of a dusky red colour towards the inner side, and the surface intersected by numerous and large blue veins. She describes the pain as being ex-

cruciating, particularly at night time. Within the last two months symptoms of hectic fever have manifested themselves, but upon the whole her appearance is not very unhealthy. She has lost but little flesh, and the treatment, both local and constitutional, to which she has been subjected since her admission into hospital, has abated the pain, and improved her general health.

The poor girl, who came into the hospital with the intention of submitting to amputation, expressed a desire that an operation, such as had been performed upon Connolly, (with whom she was well acquainted,) should be performed upon her; for up to this period, it is to be observed, that every thing had proceeded, in Connolly's case, in the most favourable manner. She had left her bed, and was wheeled about the passages of the house in a little chair constructed for the purpose.

On the 4th of August the operation was performed, as in the case of Connolly, with this difference, that the poor girl who, in coming into the operating-room, exhibited the greatest fortitude, and even cheerfulness, on the instant that the knife was applied to the skin, became so ungovernable that four strong assistants could, with the utmost difficulty, retain her upon the table. This necessarily prolonged the operation, and no doubt very much increased its severity. The removal of the divided extremity of the femur, which,

in the case of Connolly, was effected with the utmost ease, in perhaps less than a minute, was here rendered a work of infinite difficulty and danger, as when the knife was passing between the popliteal artery and the bone, and actually in contact with the former, no entreaty could induce the poor girl, whom terror seemed to have deprived of her reason, to remain for one moment at rest, she struggled so violently with both limbs, that it was with a degree of labour and anxiety, such as I had never before experienced, that I at length succeeded in passing the edge of the knife round the condyles posteriorly, and thus detaching the divided extremity of the femur. The patella, which was carious, was removed with the lower portion of the flap, as in the case of Connolly,* but the articulating cartilage of the Tibia appeared to be sound : I pared away the greater part of it, however, and removed the semilunar cartilages, of which only the inner one exhibited any marks of disease.

The treatment was conducted in all respects, as in the case of Connolly, with this difference, that I was obliged to resort to a variety of contrivances to keep the limb in position. The same unmanageable disposition, which caused so much embarrassment during the operation, greatly interfered with her recovery. Nothing could induce her to remain for one moment in any position which she found was attended with inconvenience ; the consequence of these constant

* See plate X.

changes of position was, that the extremity of the femur was often protruded through the wound. Notwithstanding all this, and the occurrence of a large sloughy sore on the buttock, in consequence of an insufficient attention upon her part to cleanliness, her general health was but little impaired: a small exfoliation took place from the extremity of the femur, and in about two months she was removed from her bed to a chair. In about four weeks after the exfoliation of the femur, the wound was completely healed, and the limb had acquired a considerable degree of firmness. About six months after the operation the femur and tibia were consolidated by a firm bony union, and the woman, though timid beyond all example, began to lay her foot gently to the ground, supporting the weight of her body, however, on crutches. She now went to the country, and in the month of October, 1824, I received a letter from my friend and pupil, Mr. Rynd, of which the following is an extract:—
“ Your old patient, Anne Lynch, *walked* from Kilcock to Johnstown house (a distance of nearly five miles) to see me this morning. She is in excellent health, and the limb is perfectly firm, though bowed outwards.” Anne Lynch has been frequently in Dublin since that period, and has presented herself for examination at most of the hospitals. She is now in town; and I have this day, Nov. 3, 1826, examined the limb, and find that the femur and tibia are firmly consolidated: the leg and thigh are not in the slightest degree wasted,

but the limb is considerably bowed outwards. She wears a shoe with a cork sole, four inches thick ; and, to use her own expression, “ is able to stand or walk the length of a day.”

It would extend this paper far beyond the limits, and indeed beyond the design, of an Hospital Report, if I were to dwell upon the reflections whether of a pathological or of a practical nature, to which these cases naturally give rise. There are, however, two or three circumstances to which I trust I may be permitted briefly to advert, not only as they serve to illustrate some of the most refined and interesting principles of the animal economy, but as they are pregnant with practical inference.

First, then, it is impossible not to be struck by the fact, that the constitutional disturbance succeeding to the excision of even so large an articulation as the knee joint, bore no comparison, in kind or in degree, with that which experience has proved to be the invariable attendant upon simple penetrating wounds of a joint, when union is not effected by the first intention. This difference in the symptoms may, I think, be referred to that well known principle of the animal economy, which disposes the system generally, to suffer in proportion as the injured part is possessed of a higher or a lower degree of sensibility, and as the injury is more or less difficult of cure by the proper forces of the constitution.

Now although it be true that when in a healthy state, the parts which enter into the composition of a joint are possessed of but a low degree of sensibility, still it is well known that when suffering under disease, there are no parts in which inflammation is attended with more exquisite pain, or in which the actions which tend to recovery are more slowly or imperfectly performed.

It is not surprising, therefore, that a penetrating wound of a large articulation should be succeeded by a train of the most painful and dangerous symptoms. By the total excision of the joint, however, all those parts which, when diseased, influence the constitution so unfavorably, are removed from the system, and the injury is resolved into a case of a clean incised wound with a divided but not fractured or diseased bone at the bottom of it.

Secondly, it is well known that after amputation of the thigh, the extremity of the divided bone, not only does not expand, but in the course of a very few weeks becomes conical. In the case of Lynch, on the contrary, the extremity of the Femur has thrown out a quantity of bony matter, which equals in size, and somewhat resembles in figure, the condyles which were removed: an effort of nature, which it is impossible to contemplate without admiration, and which might seem to supply the zealous disciples of the

Hunterian school with the strongest possible illustration of their favourite doctrine, Concerning "*the wise councils of the constitution.*"* But this doctrine, however, captivating, can scarcely be maintained, founded as it is on the unphilosophical substitution of *final* for *efficient* causes. That the process which we have just noticed is the result of "wise councils" is certain, but for those councils we must look farther; we must extend our view beyond the operation of any independent *deliberative* principle resident in the constitution, and we shall find that the fact may be ranged among the many other manifestations of that unity and simplicity of design which pervades the universe, and which, acting by *general laws*, still provides against every conceivable contingency, bringing order out of disorder, and reparation out of injury or decay. Thus, according to an *original law*, parts which are no longer of use to the system are gradually removed by the process of absorption, and this process is hastened by a certain degree of irritation communicated to the surrounding parts; accordingly the *useless* and *irritating* extremity of a fractured or amputated bone is, in ordinary cases, removed, by the absorbents of the surrounding soft parts.

But, concurrent with this, there is another law of the animal economy which provides for the for-

* Hunter on the blood, *passim*.

mation, growth, and reparation of the various parts of the system. This law provides, that each formative part should have determinate functions ; some parts, for example, to form and repair bone ; some to form and repair ligament, and some, muscle ; and all this with such nice adjustment, that in a state of health each part, as it grows, preserves its original form and just proportions ; nor is the course of this *general law* disturbed by the accidents to which the animal frame is liable ; but, on the contrary, their immediate effect is in general to bring it into more active operation ; so that the injury becomes, in a manner the *efficient cause* of its own reparation. The irritation (for example) which is excited in the Periosteum and the surrounding soft parts by the sharp splinters of a broken bone, and by the external violence by which the injury was inflicted, excites an encreased action in the vessels whose determinate function it is to secrete bone, and the consequence is, the abundant supply of the bony matter by which the fracture is to be repaired. If this injury should occur in the shaft of a bone, the injury is repaired by parts, whose determinate function it is to form and repair only the shaft ; if, in the extremity, by parts whose determinate function it is to form and repair only the extremity.

It appears to me, that by a reference to these principles we can, without the introduction of a

deliberative principle, resident in the bone or Periosteum, sufficiently comprehend how it happens that, in the case of *amputation of the thigh*, the sharp edges of the truncated bone are removed by the process of absorption; while, in the case of *excision of the knee joint*, an attempt, however imperfect, is made to restore the condyles.

For the more extended and perfect operation of these principles of reparation we must look to these classes of animals which (with reference to their organization) are, perhaps, not correctly termed "lower;" we shall there find, that a whole limb,* an eye,† or even the head itself,‡ may be perfectly restored; and it is probable that we are still but imperfectly informed as to the limits of the reparative power of nature in other animals, or even in man.§

Upon the practical inferences which may be

* As in lobsters, crabs, and perhaps all insects.

† As in the water newt. Spallanzani's Tracts.

‡ As in the snail. Ibid.

§ In the admirable and perfectly well authenticated case of Edmond Pollet, related by Mr. White in the Transactions of the Royal Society, 1769, "the head of the os humeri was sawn off," and yet the entire motion of the limb was preserved, by the formation of a new joint." See also a case of excision of the head of the humerus, by that excellent surgeon, Mr. Syme of Edinburgh, in the Edinburgh Medical and Surgical Journal, No. 88.

drawn from these operations I shall be more brief. Without venturing to define the cases in which excision of the joint is to be preferred to amputation of the limb ; I think I may venture to predict, that if I should be so fortunate as to direct the attention of the profession to the subject, a great number of limbs will be preserved, which otherwise would have been sacrificed ; and that, before long, in the *generality* of incurable accidents, and diseases of the shoulder, elbow and ankle joints, excision of the joint will be preferred to amputation of the limb ; and, even in the knee, the operation of excision will *sometimes* be considered more eligible than amputation of the thigh.

Should the cases which I have communicated in any degree contribute to so important a result, I shall, among many other sources of gratification, feel peculiar pleasure in the reflection that they may be the means of rendering that justice to the talents and to the integrity of Mr. Park, which has been too long withheld, but to which, both as a surgeon and as a man, he is so eminently entitled.

P. S. I would just observe, that were I to repeat the operation of excision of the knee-joint, I should adopt a different mode of operating from that which I employed in the cases of Connolly and Lynch.

I am satisfied, from repeated trials upon the dead subject, that the operation can be most safely and rapidly executed by separating the condyles from all their attachments, previously to sawing the bone; as soon, therefore, as the flap containing the patella is turned upwards, the edge of the knife should be carried round the condyles, close to the bone, so as to divide *all* the ligaments which connect the femur with the tibia; the tibia can then with great ease be pushed backwards, and as much of the projecting condyles can be removed as the operator may think necessary.

ON THE
FORM, CONSTRUCTION AND USE
OF A
CATARACT NEEDLE,
OF A
PARTICULAR DESCRIPTION,
EMPLOYED BY
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WITHOUT taking part in the protracted discussion respecting the comparative merits of the different operations for cataract, I shall recapitulate the arguments which have been urged in favour of that operation, to which I consider the needle, which I have to describe, as particularly applicable. The operation to which I allude is that of opening the texture of the lens, to produce its absorption by exposing it to the action of the aqueous humor.*

* Ophthalmic surgery is indebted to Mr. Pott for the important fact, that cataract may be removed by absorption, if exposed to

The strongest argument in favour of this operation is, that it is the most easily performed, affording a valuable resource to the surgeon, who, unpractised in extraction, wishes, to avoid the evil consequences of depression. Another argument scarcely inferior in weight to the last, is, that the injury inflicted on the organ is much slighter than in extraction, where so extensive a wound of the cornea is made, or in depression, where the vitreous humor is necessarily lacerated, and the retina frequently injured. If the objections to depression be well founded, recourse must be had to this operation in those

the contact of the aqueous humor by opening the capsule; and doubly indebted to Mr. Saunders for establishing by repeated operations the value of the suggestion. Attempts have lately been made to transfer the credit of this improvement to others Mr. Guthrie first gives the merit to an old lady, cotemporary with Theodore Mayerne, and then, with more reason, to Paul Barbette: but as the works of these authors have not been republished since 1690, and as the copies extant are not of frequent occurrence, it must be allowed that it is probable they were not plundered by Mr. Pott and Mr. Saunders. Frick, an American writer, attributes the improvement to Gleize, who himself actually gives Mr. Pott the credit of the discovery.

Among other technical terms in ophthalmic surgery introduced from Germany, we have that of *Keratonyxis* applied to this operation generally, although it can have reference to the anterior operation only; and with the word, we have the claim of Dr. Buckhorn to the anterior operation, which English surgeons have been practising for nearly twenty years at the suggestion of Mr. Saunders, and this on the grounds that Dr. Buckhorn, published an *inaugural Dissertation* on the subject in 1806.

cases where extraction is ineligible or impracticable. If after the operation has been commenced the lens is found too firm to yield to the needle, extraction may immediately be performed. It is, if not the only operation applicable to capsular cataract in general and congenital in particular, at least the preferable one : where the eye cannot be fixed without subjecting it to considerable pressure, it is obviously to be preferred. It is urged as an objection to this operation, that it is applicable to cases of soft cataract only. Whatever meaning may be attached to the term soft cataract, my experience leads me to the conclusion, that the operation, properly modified, is applicable to the great majority of cases, perhaps to nine in ten. It is said that it often requires to be repeated ; but this is a minor evil to which we submit, in preference to incurring the risk of either of the other operations. Extraction, if unsuccessful, cannot be repeated, and a repetition of depression is not very desirable. It has been said, without the least foundation in truth, that vision is not as perfect after this as after other operations ; the reverse is, I believe, generally speaking, the fact. That more time elapses between the performance of the operation and the recovery of sight than in the other operations must be admitted, but this, which may be a very valid objection on the part of metropolitan oculists, many of whose patients come from a distance, cannot be considered of great importance else-

where, the disadvantage of delay being counter-balanced by the greater security afforded by the mildness of the operation. From the circumstances above stated it appears, that this operation must be, and is, very generally resorted to by surgeons, and therefore any attempt to improve it should be treated with indulgence.

It has been a subject of some controversy, whether this operation should be performed by introducing the needle anterior to the iris, through the cornea, or posterior to it, through the sclerotic; and hence the terms anterior and posterior operations. The strongest argument in favour of the anterior operation is, that the injury inflicted is much less, the needle being passed through the cornea only; while in the other case it is passed through the sclerotic and choroid; wounding the ciliary processes, and probably often pricking one of the ciliary nerves. The sclerotic being a fibrous membrane, there is every reason to apprehend the consequences which generally result from injury of structure of that description; added to which we have the consequences of the injury sustained by the choroid. On the other hand, there are few varieties of structure which bear injury so well as the cornea: it heals rapidly when scratched or wounded: the extensive incision made by the extracting knife heals in a short time, although exposed to the friction of the eyelids, and bathed in tears: the wound of a cataract needle is closed in a few hours: if a

staphyloma, or a dropsical eye be opened, a portion of the cornea must be removed, or a foreign body introduced, to prevent the orifice from closing. Wound of the iris may occur in either operation. That the lens can be more effectually lacerated, and its texture opened, by introducing the needle, of which I shall presently speak, through the cornea, I am quite satisfied.

Some high authorities, among whom is Mr. Travers, are inclined to think that the objections urged against the posterior operation, on the ground of the injury sustained by the sclerotic and choroid, exist in theory only. I am however inclined to believe that those evils which we are justified in apprehending from the nature of the parts injured, actually do occur, and that the posterior operation is more frequently followed by destructive inflammation than the anterior. There can be no doubt that surgeons become biassed in favour of the operation which circumstances have led them to adopt, but the opinion of Mr. Saunders, who practised both operations, should have great weight ; he says, (p. 149.) The surgeon has more power in the posterior than the anterior operation ; but *the latter excites less pain and inflammation, and inflicts a slighter, if any, injury on the vitreous humor.*

The surgeon who would succeed in restoring vision, by exposing the lens to the contact of the aqueous humor, should never forget that the most

formidable impediment to his success is the inflammation which follows the operation; and that his aim should therefore be, to accomplish his object with the least possible injury to the organ. He must also recollect that the lens displaced, whether whole or in fragments, is equivalent to a foreign body in the eye, and must therefore be so disposed that it shall not press on the iris. A notion very generally prevails, which I cannot but call a very mistaken one, that it is necessary to place the fragments of the lens in the anterior chamber to accomplish their solution and absorption. The inexperienced operator may rest assured that if he adopt such practice indiscriminately he will have reason to repent of it. Sir W. Adams, describing such a proceeding, says after noticing the method of introducing the instrument, "I then turn the edge backwards, and with one stroke of the instrument, cut in halves both capsule and cataract. By repeated cuts in different directions, the opaque lens and its capsule are divided in many pieces, and at the same time I take particular care, to detach as much of the capsule as possible from its ciliary connexion. As soon as this is accomplished, I turn the instrument in the same direction as when it entered the eye, and, with its flat surface, bring forward into the anterior chamber as many of the fragments as I am able." See his work on Cataract, p. 255. It happens luckily for those who attempt such an operation that it cannot often be accomplished: a lens must be very soft indeed which could be cut across, and chopped into fragments, upon a struc-

ture affording so little resistance as the vitreous humor: if it yielded so easily under the edge of the knife it must also break under the needle in depression. Portions of cataract will certainly dissolve more rapidly when placed in the anterior chamber, because they are completely immersed in the aqueous humor, while in the posterior they have perhaps only one surface exposed; but it is absurd, and contrary to experience to suppose, that they cannot be dissolved behind the iris. I shall quote one or two passages from the work of Mr. Saunders to enable the reader to contrast his mild, delicate, and successful operation with the practice to which I allude. "As soon as the needle has penetrated the tunics, he gently depresses its handle so as to direct its point towards the capsule through the thin edge of the lens, and steadily projecting its flat surface between the capsule and lens, he arrives at the centre of the capsule, which he opens, taking the same precaution as in the anterior operation, not to rend it extensively, lest he should dislocate the lens. He now cautiously opens the texture of the lens, and withdraws the needle. In his subsequent operations, he will complete the central aperture in the capsule, and then loosen the texture of the lens, suffering the flocculi to fall into the anterior chamber, *but not projecting into it any considerable portions of the lens, for the process of its solution and absorption is best accomplished in its natural position.* (Treatise on Diseases of the eye, p. 147.)

I must not however be understood to say that the

fragments of the lens are in no case to be brought into the anterior chamber. A cataract is often soft and friable, falling almost to a powder under the needle; in such case the fragments necessarily fall into the anterior chamber, so as to fill it half way up, and are afterward rapidly absorbed without producing inflammation: such are certain lenticular cataracts of a blue tint, not generally found in old persons. If however the fragments be larger than the head of a common pin they are liable to produce inflammation by pressing on the iris, which pressure can only be obviated by keeping the pupil completely dilated by belladonna, an object that cannot always be accomplished. I have frequently had an opportunity of witnessing the solution of cataract *in situ* after the capsule had been opened, and I could with a magnifying glass observe from day to day the change in form which occurred from the removal of particles of cataract, until at last a portion has disappeared, and left a passage for the light. In such a case I observed three several times, that when a small fragment fell out of the capsule into the anterior chamber, pain and slight inflammation supervened, and continued until the particle was absorbed. In cases of hard cataract I do not attempt to break up the lens, because it would certainly be dislocated from its situation in the capsule in the attempt; I merely open the cataract, as directed by Mr. Saunders, and as much of the lens as I can with safety, leaving it for a future operation, when the lens shall be found softened,

and capable of being broken down into small fragments.

Another circumstance which has interfered with the success of the surgeon in this operation, is his forgetting that much time is required to accomplish the absorption of a lens, and consequently neglecting to prepare his patient for the delay. In cases of congenital cataract Mr. Saunders says, (p. 149.) "The number of operations which may be necessary to accomplish the cure of a congenital cataract will very much depend on the texture of the capsule and the size of the lens. It is frequently cured by a single operation, more frequently it requires two, often three, sometimes four, but very rarely five. This period of cure will of course depend on the same circumstances. Some are cured in a few days, the greater number in one or two months, in many the process is protracted to three, and in a few to four or even five months." The common period I have found to be from two to five months; soft cataracts are of course more rapidly dissolved. Occasionally cataracts operated on in this way disappear in a few days, not from being absorbed, but, as I conclude, from falling down into a fluid vitreous humor; as I have observed to take place in eyes otherwise diseased, especially with the tremulous iris. I have learned to look upon such an occurrence with apprehension, notwithstanding that it is attended by an apparent cure. Surgeons frequently in their anxiety to obtain a speedy cure, sacrifice all pros-

pect of success by too early a repetition of the operation. While the broken lens lies well in the posterior chamber, without pressing on the iris, the operator has reason to congratulate himself, and it is only when he has ascertained that no change is taking place in the cataract, that he is called upon again to disturb it. He should be particularly cautious not to repeat the operation while any trace of inflammation exists.

If the surgeon determine to adopt this operation of opening the texture of the lens through the cornea, he has next to make choice of the instrument which will accomplish this object most effectually, and with least injury to the organ. I conceive that all that is required for this purpose is a fine point; a cutting edge or knife being only required where the lens is to be cut in pieces. I also consider that the needle should be curved at the point, to enable the surgeon to open completely the texture of the lens if it should prove soft or friable, and it should be so constructed that the aqueous humor shall not escape. It is obvious that these objects cannot be attained by the use of the old spear-pointed couching needle, or by the smaller needles of Hey or Scarpa, unless they be very much diminished in their proportions. The flat needle of Mr. Saunders, however successfully used by him, is objectionable on account of its strait form, and the impossibility of rolling it between the fingers to produce the effect of a drill on the lens. That the modifications of

Scarpa's needle, recommended by Langenbeck and Guthrie, may be employed with the best effect, there can be no doubt; but I have to object to every needle fabricated by a cutler, that, however delicately the instrument may be formed, it is liable to leave a mark in the cornea, and when made very small to guard against this occurrence, can seldom be obtained of the proper temper and finish: if too soft they bend, or if too hard, break. To attain the desirable objects stated above, and to avoid the difficulties to which I have just alluded, I determined to try a fine sewing needle curved at the point, and after about forty operations I do not feel in the least inclined to repent of my choice. I am on the contrary every day more and more satisfied that it affords peculiar and unquestionable advantages. It rarely, if ever, leaves even the slightest mark in the cornea. I could produce examples where it has been three times introduced, and where not the slightest speck can be detected; and I have introduced it through the very centre of the cornea without any bad consequence. When fairly introduced into the eye, it is capable of accomplishing any object to be attained by a needle. The capsule can be opened to any extent: a soft or friable lens can be actually broken up into a pulp, by pushing the curved extremity of the needle into its centre, and revolving the handle between the fingers; large fragments can be taken up on the point of the needle from the anterior chamber, and forced back out of the way of

the iris, or if sufficiently soft, may be divided by pressing them against the back of the cornea with the convexity of the needle ; a method which I have repeatedly adopted with advantage. When the lens has been displaced from the capsule, in consequence of the needle sticking in it in attempting to open its texture, I have, without removing the needle, placed the lens in the anterior chamber, and then extracted it ; and in other cases have forced it back into the vitreous humor, out of the reach of the iris. From the fineness of its point, and the ease with which it can be turned and twisted in every direction, it enables the surgeon to deal most effectually with an opaque capsule ; he may pick it with the point from any attachment it may have formed to the iris, or if it hangs flaccid he may entangle and detach it by pulling or twisting. In certain cases the pupil is found nearly closed, and adhering to a small cataract of nearly cartilaginous hardness ; in these I have introduced the needle, and with the point picked up the adhesions between the margin of the pupil and this hard mass, which I have then placed in the anterior chamber, and removed through an opening in the cornea, with a pair of forceps. It may be said that all this might be accomplished by a diminutive needle on the plan of Scarpa ; but not, I conclude, with the same prospect of success, on account of the much greater size of even the smallest of such needles.

There is one difficulty attending the use of the

round needle ; it requires very considerable force to pass it through the cornea ; so much indeed as frequently to embarrass those who use it for the first time. I can however safely assert, that very little practice enables the surgeon to surmount this difficulty. It is only necessary that he should be aware of the degree of force required, that force he is perfectly safe in employing. The surgeon who rejects an instrument which affords peculiar advantages, or refuses to adopt superior methods of operating, because difficulties in execution stand in his way, can never expect to obtain the character of a good operator. The greatest advantage in the use of the needle results from the very circumstance which causes the difficulty in its introduction, it is from its conical form firmly wedged in the cornea, prevents the aqueous humour from escaping, and in consequence of being thus fixed, gives the surgeon a power of holding the eye that defies every effort on the part of an unruly patient, unless he actually pluck out the instrument with his hand. If the head be suddenly drawn back the surgeon has only to let the instrument rest loosely on his hand, and follow the motions of the patient. I have seen the needle under such circumstances slip from the hand of the surgeon, and hang from the eye without serious mischief, the handle being very light.

The size of the needle is known in the shops as number *seven*, being the forty-fourth part of an inch in diameter, about one half the size of the finest Saunders's needle which is made. The

point can be turned to the requisite curve by means of a pair of cutting forceps, or the ward of a small key; of course without heat, which would destroy the temper. It must not however be expected that all needles are so soft as to be bent thus cold: there may not be ten in an hundred of this temper, but when once turned they retain the curve without any danger of bending or breaking, and certainly possess a degree of strength and temper never observed in needles separately forged and finished by the best cutlers. They should always be tried before use by passing them repeatedly through thick calves-skin leather. After they have received the requisite curve, the point should be cut flat on each side, on a fine hone, and carefully examined with a magnifying glass to ascertain that it is perfect. The extent to which the point should be curved may be left to the choice of the surgeon, reminding him that the greater the curve the more effectual the needle will be when introduced, but the difficulty of introducing it through the cornea will also be greater. I therefore recommend those who use it for the first time to choose one slightly curved. After the point has been turned, the needle, held in the jaws of a pair of pliers or a vice, is to be run down into a cedar handle, without cement, leaving only *half an inch* of blade, which I have found to answer every purpose. If the blade be left longer it will yield and spring when opposed to a resistance. The handle should be about a fifth of an inch in diameter, and four

inches long. I use the handles made for camel-hair pencils, and find that a metallic ferule, which increases the weight, is unnecessary and objectionable. A needle thus constructed, and preserved free from rust, will retain its point for a great length of time: I have used the same one a dozen times without sharpening.

The surgeon, provided with such a needle, places himself in the usual position with respect to the patient, availing himself of whatever assistance he may find necessary to secure the lids.* He then brings the point of the needle within a very short distance of the eye, and when the cornea is brought into an advantageous position, he suddenly strikes the needle into it near its circumference. As I do not apprehend any opacity from the wound, I am not very particular with respect to the precise point where the needle pierces; I generally, however, enter it sufficiently near the margin to obviate defect from this cause. The point of the needle once fastened in the cornea, the surgeon has complete command of the eye; no action of the muscles can disengage it, and there is no danger of the needle slipping into the anterior chamber; an elevator or ophthalmostat is therefore altogether useless. The operator now

* Some ophthalmic surgeons recommend that the left hand be employed to operate on the right eye, supposing the operator to sit in front of the patient. I operate on the left eye sitting opposite to the patient, on the right standing behind him with the head resting against my chest; this latter position I find by far the most favourable and convenient.

pushes the needle through the cornea, which frequently yields like wet leather, and the eye often turns so much toward the inner canthus that the pupil is hid, and he must rely upon his knowledge of the course which the needle necessarily takes, in order to conduct it to the lens. This is the principal difficulty to be surmounted. If the surgeon does not now steadily push the needle forward, whatever resistance he may feel, he will find, when the eye returns to its proper position, that the point of the needle is still merely entangled in the cornea. This also is the period of danger to the iris: if the operator does not keep the flat of the needle to that membrane, with the point down and the convexity up, he will be very liable to injure it. Should it happen that the point of the needle has passed through the iris, it may be easily extricated by gently drawing back the instrument without removing it from the eye. After the needle has been fairly entered, and that the operator sees its point at the opposite side of the pupil, he brings the cornea forward merely by pulling it upon the needle, to which it is completely secured, in consequence of the blade being wedged into its texture. He now turns the point directly back, and gently tears open the capsule, picking and scratching the surface of the lens with a rotatory or drilling motion of the instrument; not with the lever or cutting movement, which is necessary when Saunders's needle is used. If the lens be soft and friable, the fragments fall like snow into

the anterior chamber, and the surgeon may deal very freely with it, pushing the needle deep into its structure, and twirling the point round so as to mash it into a pulp. If however it proves hard, and that he attempts to deal thus with it, he fixes his needle in its tough and glutinous structure, turns it out of the capsule, drags it against the iris, and makes it necessary either to extract it or force it back into the vitreous humor. As I have already observed, if the cataract be hard, the capsule should be opened, and the centre of the lens cautiously scratched with the point of the needle, so as to expose its texture to the contact of the aqueous humor, by which it is softened and fitted for breaking up on a future occasion. In withdrawing the needle the surgeon has to encounter the same description of difficulty which attends its introduction; it is tightly held by the cornea, requiring to be turned on its axis in order to extract it, as an awl is drawn from leather. It must not however be forgotten that this wedging of the instrument is attended with the great advantage of enabling the surgeon to operate on the most unsteady eye without an ophthalmostat or elevator.

While advocating the merits of this instrument I am not ignorant of the proposal of Buckhorn and others to employ a round needle. I have not, however, been able to ascertain from the books what is the precise form and size of Dr. Buckhorn's instrument, and as I have not seen his

Essay I must be excused if I have been repeating what he has already stated. Scarpa's needle is round in the stem, but it is spear-pointed, and consequently allows the aqueous humor to escape, a disadvantage that must attend the use of every needle so constructed. In the needle which I have been describing we have combined the advantages of a delicately small blade, of great strength and fine temper, inflicting so minute a wound that no mark remains in the cornea, capable of opening the texture of the lens as effectually as any other needle, and from its conical form, not permitting the aqueous humor to escape during the operation.

OBSERVATIONS
RESPECTING
AN ULCER OF PECULIAR CHARACTER,
WHICH
ATTACKS THE EYE-LIDS AND OTHER PARTS
OF THE FACE.

By ARTHUR JACOB, M. D.

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ON ANATOMY AND SURGERY IN THE MEDICO-
CHIRURGICAL SCHOOL, PARK-STREET.**

ATTEMPTS to establish the specific character of a particular disease, however fruitless they may prove, are attended with the advantage of promoting accuracy of observation, and exciting minute inquiry. With the hope that such may, in some degree, be the case in the present instance with respect to the obscure subject of tumors and ulcers, I am induced to call the attention of surgeons to a disease, which, although probably observed by many, has never, I believe, been accurately described. I allude to a destructive ulceration of peculiar character which I have observed to attack and destroy the eyelids, and extend to the eye-ball, orbit, and face. The characteristic

features of this disease are, the extraordinary slowness of its progress, the peculiar condition of the edges and surface of the ulcer, the comparatively inconsiderable suffering produced by it, its incurable nature unless by extirpation, and its not contaminating the neighbouring lymphatic glands. The slowness with which this disease proceeds is very remarkable ; of three cases which have come under my observation, one, that which is represented in the annexed engraving, had existed for four years, and now presents no remarkable difference when compared with the drawing, which was executed six months ago : the eye-ball, exposed and dissected out as it has been by the ulceration, remains precisely in the same state, and the edges occupy the same situation as at that period. In another case, now also under my observation, the patient, an unmarried woman aged fifty-five, states, that the disease has existed for twenty-three years without having ever healed ; her eye-ball also has been exposed by the ulceration for nearly a year, and has not yet been totally destroyed. In the third case, that of a gentleman about sixty years of age, the disease existed for about nine years previous to his death, which took place from a different cause.

The sufferings of persons labouring under this disease do not appear to be very acute ; there is no lancinating pain, and the principal distress appears to arise from the exposure, by ulceration of nerves or other highly sensible parts. In the ex.

amples which I have met, the disease at the worst period did not incapacitate the patients from following their usual occupations ; the gentleman, to whom I have alluded, was cheerful, and enjoyed the comforts of social life after the disease had made the most deplorable ravages.

In two of those three cases, I have been unable to ascertain with certainty the nature of the disease at its commencement ; whether the ulceration was preceded by tubercle, encysted tumor, or wart. The account given by the patient from whom the drawing has been made, a poor woman aged fifty, is, that it arose from a blow, and commenced on the temple at a short distance from the external angle of the eye. The other woman, whose disease has existed for twenty-three years, says, that it was preceded by “ a kernel under the skin over the eye-brow, which was not rough like a wart, and which existed for two or three years before it came to a head, when she picked it, after which it never healed.” I quote her own words : it was probably an encysted tumor. In the gentleman’s case the disease commenced in an old cicatrix, the consequence of confluent small pox : it was at the inner angle of the eye, and constantly moistened by the tears, which could not escape into the nose, the *puncta* being closed.

This disease may be observed under two very different conditions, either in a state of ulceration, or in a fixed state, in which no progress is made

toward healing. In this latter condition the parts present the following appearances : the edges are elevated, smooth and glossy, with a serpentine outline ; and are occasionally formed into a range of small tubercles or elevations : the skin in the vicinity is not thickened or discolored. The part within the edges is in some places a perfectly smooth, vascular, secreting surface, having veins of considerable size ramifying over it ; which veins occasionally give way, causing slight hæmorrhage ; in other places the surface appears covered by florid healthy looking granulations, firm in texture, and remaining unchanged in size and form for a great length of time. The surface sometimes even heals over in patches, which are hard, smooth, and marked with the venous ramifications to which I have alluded. This healing may take place on any part of the surface, whatever may be the original structure : in the case from which I have had this drawing made, the eyeball itself, denuded as it is by ulceration, is partially cicatrized over. When the ulceration commences it proceeds slowly, cutting away all parts indiscriminately which may be in the direction in which it spreads : the surface in this state is not so florid, and presents none of the glistening or granulated appearance above noticed : the pain is generally greater at this period. It appears also that there is a tendency to reparation, exclusive of the cicatrization which I have mentioned : there is a deposition of new material, a filling up, in certain places, which gives a uniformity to the

surface which should otherwise be very irregular, from the nature of the parts destroyed. When the disease extends to the bones, they sometimes exfoliate in scales of small size, but more generally they are destroyed, as the soft parts, by an ulcerative process. The discharge from the surface is not of the description called by surgeons unhealthy or sanious, but yellow, and of proper consistence; neither is there more fætor than from the healthiest sore, if the parts be kept perfectly clean, and be dressed frequently. There is no fungous growth, nor indeed any elevation, except at the edges, as already noticed, and even this is sometimes very inconsiderable. There is no considerable bleeding from the surface, and when it does occur, it arises from the superficial veins giving way, and not from sloughing or ulceration opening vessels: sometimes the surface assumes a dark gangrenous appearance, which I have found to arise from the effusion of blood beneath. I have not observed that the lymphatic glands were in the slightest degree contaminated, the disease being altogether extended by ulceration from the point from whence it commences.

After the preceding description it is scarcely necessary to state additional arguments to prove that the disease is peculiar in its nature, and not to be confounded with genuine *carcinoma*, or with the disease called *lupus* or *noli me tangere*. From the former it is distinguished by the absence of lancinating pain, fungous growth, fætor, slough,

hæmorrhage, or contamination of lymphatics ; from the latter by the absence of the furfuraceous scabs, and inflamed margins, as well as by the general appearance of the ulcer, its progress, and history. It is equally distinct from the ulcer with cauliflower-like fungous growth, which occasionally attacks old cicatrices.

It remains to be determined whether this disease can be removed by any other means than the knife or powerful escharotics ; and from the experience I have had in those cases, I am inclined to conclude that it bids defiance to all remedies short of extirpation. I have tried internally alterative mercurials, antimony, sarsaparilla, acids, cicuta, arsenic, iron, and other remedies, and locally, simple and compound poultices, ointments, and washes, containing mercury, lead, zinc, copper, arsenic, sulphur, tar, cicuta, opium, belladonna, nitrate of silver, and acids, without arresting for a moment the progress of the disease. I have indeed observed that one of those cases which is completely neglected, and left without any other dressing than a piece of rag, is slower in its progress than another which has had all the resources of surgery exhausted upon it. The success even of powerful escharotics is doubtful. Mary Sherlock, the old woman who has laboured under the disease for twenty-three years, and who is now in the Incurable Hospital, says that “ a burning cancer plaster ” was applied several times, seventeen years ago, and she has lately had the arsenical

composition, called Plunkett's Powder, applied without any good effect. The gentleman to whose case I have alluded, had the sore healed, when it was very small, by the free application of lunar caustic, under the care of Mr. Travers; it however broke out again, and spread without interruption, until it destroyed the lids and globe of the eye, under which circumstances he, in despair, submitted himself to a popular charlatan, who, bold and fearless from ignorance, gave a full trial to escharotics: he repeatedly applied, what I understood to have been a solution of muriate of mercury in strong nitric acid, and in a short time excavated a hideous cavern, extending from the orbital plate of the frontal bone above, to the floor of the maxillary sinus below, and from the ear on the outside, to the septum narium within; yet the unfortunate gentleman survived, but the disease preserved in every respect its original character. Mr. Colles however tells me, that in a case which came under his care before the disease had extended to the lids, he succeeded in establishing a permanent cure by the application of a powerful escharotic, covering up the eye during the operation of the remedy with gold beater's leaf.

Such is the information which I have to communicate respecting this malady: I offer it with the hope that surgeons who have met with similar examples, may be induced to give the result of their experience respecting it. Sufficient has

however been ascertained to prove, that when the disease exists in a situation which admits of it, the sooner it is completely extirpated by the knife, or the actual or potential cantery, the better chance is afforded the patient of relief from a most distressing and fatal malady.

SECOND COMMUNICATION
RELATIVE TO THE
FATAL CONSEQUENCES
WHICH RESULT FROM
SLIGHT WOUNDS RECEIVED IN DISSECTION.

BY

A. COLLES, M. D.

**ONE OF THE PROFESSORS OF ANATOMY AND SURGERY IN THE
ROYAL COLLEGE OF SURGEONS IN IRELAND.**

ON Tuesday May 18th, 1824, Mr. Shekelton was engaged in examining the body of a man who had died of peritoneal inflammation, consequent on the operation of lithotomy. The examination took place in a very few hours after death, the body still retaining its heat. I observed that soon after the abdomen was opened, Mr. Shekelton pricked himself with the point of the knife, which called forth the usual involuntary expression of pain, but was not further attended to. He proceeded to take out the contents of the pelvis, so that his hands were necessarily immersed in that cavity for a considerable time.

On the following evening (19th) he felt himself unwell ; on Thursday (20th) he gave an anatomical demonstration as usual, and immediately after it he went home very ill, but owing to the natural reserve of his disposition he did not apply to any of his medical friends. On Friday evening (21st) Mr. Cusack accidentally saw him, and found some of the glands swelled in the left axilla, from which he was apprehensive that the disease was produced by the wound received on Tuesday. When Mr. Cusack again visited him on (22d) Saturday, the condition of these glands was so much improved as to induce him to look upon the case as one of simple fever brought on by cold and fatigue, to which Mr. S. had lately been much exposed.

On Sunday morning (23d) I first saw Mr. S. he told me in a most emphatic manner, that he had passed a *most wretched night* ; yet the febrile symptoms were not very severe. Pulse only 84, though his skin was hot, and there was an indescribable anxiety and distress very perceptible : he said that he felt as if his stomach was too full. The glands in the left axilla were slightly enlarged, and tender to the touch ; but there was neither swelling nor redness along the arm. He complained of pain along the course of the ulnar nerve, and down the left side of the thorax. There was no appearance of inflammation in the ring finger, which had been wounded ; indeed we could scarcely discover any trace of the wound.

Were it not that I recollected to have seen him wound the finger, and that his present anxiety and distress very far exceeded in severity the other febrile symptoms, I should have supposed him affected with common fever only.

By his own desire leeches were applied to the axillary glands, but he suffered so much from the bites of each of these, that after the fourth had fixed, he refused to let any more be applied. He took an emetic, which operated well, but did not produce any marked impression on the symptoms.

Monday (24th). He complained of uneasiness in the stomach and bowels, and felt as if he would be much relieved by having a free stool. His tongue was covered, but not very thickly, with a white mucous coating; skin of the face assuming a yellow colour; features rather sharp; no uneasiness in the course of the lymphatics of the arm; swelling and pain of the axillary glands had ceased; so that some of his medical friends still indulged the hope that the case would prove to be but a severe instance of common fever.

Tuesday (25th). Constitutional distress increased, and the real nature of the disease was too obvious to all his medical attendants. We agreed that he should have a full opiate at night.

Tuesday evening. This afternoon a red spot, the size of a shilling, appeared on the right

patella. For two hours this evening he suffered such severe torture in the knee, that he declared he would much rather endure the pain of having every limb amputated in succession, than again undergo the pain he had suffered in that knee; this pain he referred to the cavity of the joint.

Wednesday (26th). At ten o'clock last night he got sixty drops of laudanum, and in the course of two hours, twenty more; these produced very profuse and general perspiration; but no alleviation of symptoms followed. He dozed a good deal, and his attendants reported that he had passed a good night; he himself declared that it was a most uncomfortable night.

During the night his brother, Dr. Robert Sherkelton observed a large red, and swollen patch over the right tibialis anticus muscle. This, and the spot on the patella, now had a solid feel, and were not very tender to the touch.

Early this morning (at two o'clock) the right arm, from the shoulder down to the elbow, was observed to be swelled, but without discoloration; the right thigh also was swelled, but not discoloured. A red patch appeared on the dorsum of the left foot, and he complained of a pain in the left scapula and shoulder. Tongue covered with a thick coating of white mucus; countenance of a deeply yellow tinge.

Thursday (27th). He now complained of pain of his left arm, with considerable swelling of it and of the forearm. Yellowness of skin was now universal, and more deep than before; adnatæ of the eyes very yellow; countenance more sharp and contracted; tongue as yesterday.

At six o'clock, this evening, his weakness became extreme, his features very sharp and contracted, yet his pulse was regular, and not very quick.

Friday (28th). Twice in the course of last night he was supposed to be dying; yet he soon after called for solid nourishment, eat a teacupful of panada, and took the yolk of an egg beat up with brandy; this he did from some notion that he now only required solid food in his stomach to complete his recovery. He was obviously not free from delirium.

During the night he passed a large quantity of urine of a peculiarly dark brown colour.

At five o'clock this morning he sent for me, and requested that I would make incisions into the left arm and forearm, which were much swollen, but free from redness; indeed the only place where any redness could be seen was on the left scapula. I could not refuse to comply with his wishes, although I knew how unavailing this measure must be; for the hand was livid, and cold

as a gangrened hand : he had the power of moving the thumb only ; all his extremities were cold ; this was the coldest ; the right arm and forearm were less swelled, and soft ; the spot on the middle of the right leg, which always had a solid feel, was now more extended and less raised.

I made an incision into the red patch on the back of the left shoulder, on the inner side of the arm, on the forearm, and along the outer edge of the biceps at the bend of the arm. All these incisions were carried through the fascia of the limb. Nothing, except a small quantity of blood, issued from any of these incisions ; in none of them did the skin or cellular substance exhibit any diseased appearance, except in that at the bend of the arm, where the cellular membrane had a deep yellow colour. His brother, in the course of the night, had punctured the bursa on the olecranon of the left arm, which was very tense, red, and painful ; from this a large quantity of red watery fluid still continued to flow. During the night he complained that half a glass of claret felt as strong and hot in his stomach as if it had been ardent spirits.

He died at nine o'clock this morning.

In this case we recognize the same train of symptoms as in the cases of Mr. Hutchinson and

Mr. Dease, reported in vol. 3d of Dublin Hospital Reports, &c. The present case tends to strengthen the opinion I then advanced, "that slight wounds received in dissecting fresh bodies, sometimes give rise to a peculiar disease, perfectly distinct from every other disease consequent on similar wounds." In addition to the other symptoms there described as being characteristic of this disease, we may mention this striking one, viz. that previously to the disease terminating either in death or in recovery, swelling and inflammation seize upon the portion of the limb interposed between the original wound and the first seat of pain. We see that this took place in Mr. Hutchinson's case at so late a period as three weeks; the fever, although it had remitted, not having ceased until this inflammation had occurred. In the fatal cases of Mr. Dease and Mr. Shekelton it appeared, in the former on the 9th, in the latter on the 10th day.

I must entreat the attention of the reader to this fact, that the redness which is seen on the swollen parts is very unlike to that of erysipelas, for the colour is that of a peach-blossom, is of very small extent compared with the extent of the swelling, is seen for a few days, perhaps for a few hours only, on the same spot, and next is observed in some very distant part, possibly in the opposite limb; besides, this peculiar redness vanishing quickly from a part, does not leave any vesication

or desquamation after it, as is seen in cases of erysipelas.

If any proof be wanting to establish an essential difference between this disease and phlegmonoid erysipelas, it will be found in the state of the swollen parts when cut into. For although four incisions were made into different parts of the left arm of Mr. Shekelton, yet no discharge, except a small quantity of blood issued, nor was any change of structure visible except that slight one which has been noticed at the bend of the arm.

This sudden shifting of the swelling and redness from one to another, and very distant part, is not to be confounded with what we sometimes observe in chronic diseases, viz. an abscess suddenly appearing in a part remote from the original seat of the disease. For in such cases the abscess quickly forms, and with this peculiarity, that we feel the fluctuation of pus although we have scarcely any marks of preceding or accompanying inflammation: the skin is not reddened until the ulcerative process is about to give exit to the fluid. In such cases, although we may have a succession of abscesses, yet we have not any instance of a sudden swelling accompanied by a light blush of redness, and of its equally sudden disappearance, leaving after it only a slight degree of swelling, without any other symptom or trace of inflammation.

In short, this peculiar disease, the effect of slight wounds received in dissection, presents much less of inflammation of the wound or its vicinity than occurs in the various other diseases to which slight injuries more frequently give rise. Here it seems to produce mischief by exciting a fever, which in its turn induces a swelling and redness of very peculiar characters, although at length (if the patient chance to survive) it will end in inflammation and suppuration of the wounded limb.

Whatever difference of opinion may be entertained as to the nature of this affection, it will be allowed on all hands, that although some few have escaped, yet the plans of treatment hitherto pursued have all proved quite unequal to contend with so formidable a disease.

The plan which I would suggest as most likely to succeed (for as yet it is untried), is to administer calomel with the view of speedily exciting ptyalism. Many experienced practitioners I know are in the habit of combining this medicine with opium, when their object is to excite ptyalism very quickly. But I should prefer giving it in an uncombined form, and in doses of three grains every three or four hours. When administered in this manner, it seldom fails to produce salivation in thirty-six or forty-eight hours, provided that the two or three first doses affect the bowels. In cases where the bowels are not moved by the first doses of this medicine, it will be necessary, in

order to ensure its effects, either to combine the calomel with some purgative, or occasionally to interpose a purgative. When thus administered it will very seldom disappoint our expectations. Mercury administered in other forms of fever has so often succeeded in effecting a cure, that I think we may, with some confidence, anticipate its good effects when administered in the fever consequent on wounds received in the dissection of very fresh human bodies.

Stephen's-Green,
August, 1824.

POSTSCRIPT.—Since the preceding pages were written, a very valuable Essay on the subject of Diffuse Inflammation has appeared in the first vol. of the Transactions of the Medico-Chirurgical Society of Edinburgh, from the pen of Dr. Duncan, jun. The extensive collection of cases contained in that Essay, demonstrates the dangers which too frequently arise from slight wounds; but I cannot agree with the author in considering all these cases as examples of diffuse inflammation. Some few of them obviously are instances of the same disease with that of Mr. Shekelton. It is remarkable how exactly the morbid appearances in the thorax of the female subject, whose dissection gave rise to cases 8 and 9, corresponded with those of the subject which Mr. Dease was dissecting when he received his fatal wound.

As so few histories of the dissection of these fatal cases have been published, I shall make no apology for drawing the attention of the reader to this sentence in the report of morbid appearances in the 9th case. "The cellular substance of the arm was every where healthy, and there was not the slightest vestige of disease in the forearm, nor could any connection be traced between the abrasion on the finger and the morbid parts."

I shall only add, that every reliance may be placed on the accuracy of this account, for the dissection was made by Mr. Lizars.

Mr. Travers, of London, in his "Inquiry concerning Constitutional Irritation," a work rich in valuable materials, and replete with ingenious reasoning, considers the effect of slight wounds received in dissection as a distinct disease; and he seems inclined to ascribe the mischief to the introduction of a poison, which he thinks is generated by the first stage of decomposition of the human body.

I shall not pretend to decide whether the disease be owing to this cause, or rather (to use Mr. Travers's words) "to the condition of remaining animalization, which has hitherto resisted the operation of external agents:" but I must say that I cannot admit the general conclusion, that "this disease, bearing a specific character, may

“ be derived from absorption of the fluids of both “ fresh and stale bodies.” No doubt it has arisen when the body under dissection has been cold, and nearly twenty-four hours dead, as certainly as where the subject was so recently dead as still to retain some of its warmth. I do not think, however, that we have on record a single well marked case of this disease having arisen from the dissection of a body in which any of the obvious signs of putrefaction were present.

In No. 88 of the Edinburgh Medical and Surgical Journal, is a paper by Dr. James Dease, Surgeon to the Forces, the second case of which is clearly an instance of this disease, and one in which calomel had been given pretty largely ; but it does not appear that it was given with the view of inducing salivation. Ptyalism was not excited, and the case terminated fatally.

CASES
OF A
FATAL ERETHISM OF THE STOMACH,
WITH
OBSERVATIONS.

By JOHN CHEYNE, M. D.
PHYSICIAN GENERAL.

CASE A.

AUGUST, 1818. An athletic young man, 19 years of age, of an ardent disposition; and sanguineo-choleric temperament, who, about the end of July and beginning of August, when the weather was sultry, had exposed himself to heats and colds, and had eaten a great quantity of fruit, and had also frequented the theatre, and been much in company, was taken ill on the 11th of August.

Aug. 13th. I found him flushed, his tongue white, pulse 90. He had stated returns of pain at the umbilicus; thirst, sickness, and vomiting. No tension, nor tenderness in any part of the

abdomen. He had taken 3ss. of *Rhubarb* and six gr. of *Calomel*, without effect. R. *Hydrarg. subm. gra. xv. Opii, grana ij. m. in pulv. sex div. Sumat j 2dis horis; Enema purgans.*

Evening. No stool from the glyster. V. S. ad $\frac{3}{4}$ xxx.

14th. After having taken all the pills, he, this morning, took a solution of salts in an infusion of *tamarinds* and *senna*, which produced large fluid and bilious stools.

15th. Slight salivation.

16th, 17th, 18th. Passed bilious stools freely. The abdomen was without pain, tension, or tenderness. Stomach continued irritable, resisting various means of relief. *Saline preparations, blisters, laudanum, by the mouth and in glysters.*

19th. Pyrexia. P. 100, and hard; vomited a rosy liquor of the colour of *verdegris*, insipid, and mixed with the contents of the stomach. We could not prevent him from drinking, and he uniformly vomited without pain after he had taken a certain quantity of fluid. V. S. ad $\frac{3}{4}$ xvi. *Rep. Pil. Calomelanos cum Opio.*

20th. P. softer; stomach less irritable since venesection. A vesicular eruption round his mouth.

21st. Refused the pills, which he says increase the sickness.

27th. He drank lime water and milk, which, while he thought it milk and water, settled his stomach, he said, and when vomited it was accompanied with less of the green fluid; but when he discovered that it was lime water mixed with the milk, he refused to take it. First he said buttermilk would cure him, then that a large drink of water would; both of which he immediately vomited. *Infusion of Mint* was tried; *Muriate of Kali*, with *Muriatic acid* $\bar{a}\bar{a}$ 3 i. in six ounces of water; *Saline draughts* with *Tincture of gentian*, with *laudanum* and *burnt brandy*; *Sol. sulph. magn.* with the addition of *Carbonate of magnesia*, which acted sufficiently as a purgative. *Leeches*, *blisters to the abdomen*, *aperient and anodyne glysters*; all, and many other remedies and nostrums, in vain. The tongue gradually became angry at the edge, inflamed and aphthous. Delirium at night took place. There was neither pain, tension, nor tenderness of the abdomen.

28th. Black vomit; hæmorrhage from the nose and throat; blood passed by stool; prostration; palpitation; quick breathing.

24th. Death.

CASE B.

1st day. A young lady of 17 was affected with sickness and vomiting of a green ropy fluid, her health having been previously good.

2d. She vomited every thing immediately after it was swallowed; she also vomited a fluid of the colour of verdigris.

3d. Her tongue was white, the edges were clean and florid, and the throat was sore; frequent discharges from the stomach of the green ropy fluid. She did not vomit during the night, but after taking *some Rochelle salts in weak chicken broth*, the vomiting returned. In the evening pressure on the stomach caused uneasiness. *Hirud. xx. abdom.*

4th. Bleeding from the leeches excessive; the effusion continued all night and morning. Her strength was sunk, her extremities cold, her pulse feeble and rapid; overpowering sickness and vomiting of the green fluid. *Enema cum Tinct. opii. R. Opii gr. ij. f. Pil. iv. Sumat i. sing. hor. Fetus cruribus, et abdomini, et postea App. Vesicat. Enema cum. Liq. æth. oleosi.*

Evening. The foregoing remedies produced a

degree of reaction. Has no ease unless immediately after vomiting. *Magnesia and Lemon juice.*

5th. Slept much during the night; uninterrupted sickness and vomiting; nothing would rest on the stomach. *Pills of Aloes and Rhubarb.*

Evening. Continued vomiting; prostration; pulse scarcely distinguishable; jactitation. *Burnt Brandy; Pills of Cayenne Pepper; Cataplasm of Mustard, Horse Radish and Radical Vinegar.*

Death in the course of the night.

CASE C.

D—— B——, of a saturnine complexion, sedentary habits, and rather costive bowels, although not confined to the house, and not without appetite, had been affected with occasional sickness and vomiting of every kind of food for fourteen days; the food thrown up was frequently sour.

Dec. 14th, 1823. I prescribed pills of *Aloes, Rhubarb, and Bicarbonate of Soda.*

Dec. 15th. In the night he vomited a yellow bitter fluid, I presume bile; in the morning the discharge from his stomach consisted of some undigested chicken broth, which he took on the 14th, and a quantity of green ropy fluid, exactly

of the colour of the green baize floor cloth. He said the pills made him sick. *Water in sips ; a grape to allay thirst ; Enemata ; Vesicatorium Epigastrio.*

December 16th. If he took more than two or three grapes at once, he vomited them. P. 76, soft ; no heat of skin ; tongue swollen, furred and dry in the centre. Having discovered a tinge of blood in the water with which he had washed his mouth, I was led to examine his throat, which appeared slightly inflamed. Urine turbid ; stools produced by the glysters natural, with a proper quantity of healthy bile. *Lemon ice ; iced water sparingly ; Blister to the left hypochondrium. Twelve leeches to the anus.*

December 17th. The leeches bled so profusely within the rectum, that when he went to stool he passed from half a pint to a pint of blood which had lodged there. He evinced a dislike to grapes ; he took two or three spoonfuls of tea, which he said was too strong, and produced uneasiness of his stomach. In the course of the day he took a glass of lemon ice and the same quantity of pump water, which he preferred to every thing, and with which he was constantly rinsing his mouth ; he had no complaint but of thirst ; two aphthous spots were discovered on the inflamed uvula and velum ; he had three liquid, but otherwise natural stools in the night. P. 76 ; skin temperate. *Various gargles were used ; glysters of milk, &c.*

December 19th. Tongue less swelled; throat much inflamed and beset with aphthous spots; no vomiting since the night of the 16th. He took *a few ounces of human milk and a little ice. Blisters to the angles of the jaw. Glysters, gargles, &c.*

December 20th. The aphthous spots increasing in number; debility great. *Arrow root with a little sherry. Continue milk and Cinchona glysters.*

December 21st. Aphthous spots had completely overspread the whole of the palate. Countenance haggard; tarsi inflamed; an eruption of small papulæ on the back and breast.

December 22d. Pulse 120; weak; strength sunk.

December 23d. Refuses to take nourishment.

December 24th. Oppressed breathing.—Death.

DISSECTION performed on the morning of the 25th.

The body was emaciated; the abdomen retracted. The gall bladder was full of dark bile; the stomach, large and flaccid, contained nearly a pint of green fluid. Its mucous membrane presented a peculiar appearance; the veins were unusually

turgid; the surface, particularly at the great extremity, was of a dark mahogany colour; the colour was owing to vascular distension, and general extravasation into the submucous tissue. The same appearance of vascular distension and extravasation, but in a lesser degree, was observable in the intestines. The mucous membrane of the oesophagus was of a deep red colour, and highly vascular.

CASE D.

A young gentleman 20 years of age, of a choleric temperament, narrow chest, and muscular limbs, after having been exposed to anxiety of mind, was, in the evening of the 30th March, attacked with some pain in the upper part of the abdomen, shortly after taking a draught of ale while on a fatiguing journey; the pain, not very acute, was increased on pressure, and attended with sickness and vomiting of a bright green fluid, which frequently recurred in the course of the night.

Next morning (May 31), an apothecary gave him a *large glyster*, which produced a considerable discharge of hardened fæces; he also gave him *three grains of calomel*. At one o'clock I found him with no tension, and but little pain of the abdomen, unless on considerable pressure. Pulse about 80; furred and rather swollen, but moist

tongue ; he had just vomited between a pint and quart of an amber coloured fluid, in consistence like melted gelly, which he said was tart, but not bitter. *Rochelle salts in a solution of Soda, saturated with lemon juice ; Blister to the abdomen ; Glyster ; Lemonade.*

June 1st. Slept well in the night. He had a large natural stool, and passed urine freely. He took a slice of dry toast and tea this morning. Has no tumour, tension, or tenderness of the abdomen. P. 84 ; rather flushed ; tongue less swelled, moist. *Contr. Medicamenta. Fovr. crura.*

June 2d. Natural discharge from the bowels. Tongue moist and nearly clean ; ate toast and tea with a relish ; p. 76.

June 3d. No complaint.

CASE E.

On Monday March 7th, 1818, at 11 A. M.—Catherine Ryan, a servant girl 17 years of age, came to the Meath Hospital, bent double with pain in the epigastrium ; the pain was fixed and burning, and at times so severe, that every expiration ended in a moan. When placed in bed, she turned to one side and drew her knees up to her stomach. There was some tension of the in-

teguments of the abdomen, very considerable tenderness, and an increase of pain on pressing upon the epigastrium. Whatever she swallowed, whether solid or fluid, was instantly vomited. P. 100. Skin hot; tongue moist, grey and furred. She was taken sick on Friday; on Saturday she had occasional pain in the region of the stomach; since Saturday night, pain and unceasing vomiting, and retching. Catamenia absent for six months, in other respects healthy.—*V. S. ad 3 xx. Enema purgans. Small doses of Sulph. Magnesiae in infusion of Senna.* During the blood-letting she vomited a considerable quantity of green ropy fluid.

At three o'clock pain great, vomited as soon as any fluid reached the stomach, p. 120. *V. S. ad 3 xvj. Omit all medicine; foment the belly diligently,*

At nine o'clock pain rather mitigated, as well as the intolerance of pressure. Continued vomiting and retching; the blandest fluid, such as barley water or whey was rejected as quickly as the most nauseous cathartic. She thought that the fomentations after the bleeding had given her some relief; with the glyster some clay coloured faeces were returned. *Cont. Enemata et Fetus. V. S. ad 3 xvi. Vesic. regioni ventriculi. Sumat Calomelanos granum singulis horis.*

Wednesday, ten o'clock. She took nine grains

of calomel in the night, and this morning her stomach was so much settled, that she was able to take a dose of castor oil. The stomach retains whey and gruel, and she has had a stool. P. 120. Countenance flushed. *V. S. ad 3 xii. Calom. gr. i. Sttis horis.*

Wednesday. No tenderness or tension of the abdomen. No sickness; bowels free; convalescent.

There can be little hesitation in considering cases A, B, C, D, which are well entitled to the attention of the pathologist, as specimens of one and the same disease, the essence of which was an erethism of the stomach of a very uncommon kind. The subjects of these cases were three brothers and a sister. The family to which they belonged consisted of six children; two, in addition to those whose cases I have related,—one a young lady of eighteen, who died before I knew the family, of a similar complaint; at least so I infer from the testimony of her mother, who described her last illness as accompanied with vomiting, which was insuperable, of a fluid of the colour of verdigris; some uneasiness in the epigastric region, and aphthæ covering the pharynx.—The other a young gentleman of 20, who after having laboured for some time under cough, pu-

ruent expectoration, and a quotidian remittent, which had greatly reduced his strength, at last sunk, in two or three days, under the symptoms which attended the fatal illnesses of his two brothers and two sisters. It is further remarkable, that the father of this family died in a similar manner; he was not under my care, nor have I been able to obtain a particular account of his death, but I learn from one who was present, that, during the last two or three days of his life, he was much distressed with sickness and vomiting of a bright green fluid.

During my attendance on the individuals whose cases are marked B, C, and D, I experienced great uneasiness of mind, arising from the inefficacy of the means which were adopted in case A, and the dread of a similar result.

With respect to the treatment, I cannot affirm that Bloodletting was advantageous in case A; indeed the disease appeared to me to pursue its course uninfluenced by the remedial measures. In case B, the patient appeared to sink, in consequence of the effusion of blood, an occurrence by no means unusual, when bleeding after the application of leeches is not timely suppressed. In case C, I perceived not the slightest benefit from bloodletting, upon which I resolved, should I unhappily have to treat another case of the same kind, to abstain from that remedy, either general

or local. Nor was Calomel and Opium, which, in inflammation of the mucous membrane, next to venesection, is the most powerful antiphlogistic we possess, of any efficacy. In case A, salivation was produced without any decided benefit. It will be perceived, moreover, that all the usual means of quieting the stomach, when irritable, were tried in vain.

Having had many opportunities of seeing the irritable stomachs of children (which purgatives often only exasperate, and thus perpetuate and extend disease,) brought in a day or two to a quiescent state by mere abstinence, by restricting the patient to water, or weak lemonade in small quantities, and occasionally giving a few grapes, a mode of practice which, when there is no fullness of the hypochondria, will sometimes be found eminently successful, I resolved, when I came to treat the subject of case D, to give him no active medicine, and had he not been anxious to take the solution of Rochelle salts with soda and lemon juice, as finding it grateful to his stomach, my intention was to apply blisters and extensive fomentations, to have enemata administered, to permit him to drink lemonade sparingly, and to withhold all medicine by the mouth. Let me not forget to remark, that when the young gentleman above alluded to, who laboured under pulmonary disease, was attacked with sickness, vomiting, and confined bowels, about two years before his death, I prescribed some aloetic pills, and sent

him to the country, where he recovered in two or three weeks.

It appears that the green fluid vomited by these patients was the product of the stomach, and not of the liver. The stomach of D— B—, Case C, when laid open, contained much of the green fluid, while the gall bladder was full of dark bile. In three of these cases the patients declared that the green fluid was without bitterness, and in the 4th, in which the patient said it was bitter, he had previously taken enough of aloes to account for the bitterness of the contents of the stomach.

Lest these cases, and the observations which I have made, should lead to inertness in the treatment of genuine inflammation of the stomach, I have added case E as illustrative of the decisive measures which are often necessary in the more acute forms of gastric inflammation, the patient in twenty-five hours having lost upwards of sixty ounces of blood. This was an example of acute inflammation of the mucous surface of the stomach, which, judging from the tension and tenderness of the epigastrium, had extended to the serous surface, the affection of the mucous surface however which was intense, being the main concern.

In this case all medicines taken by the mouth, nay the mildest drinks, were rejected, and appeared to be hurtful, and consequently were discontinued. By the help of bleeding and fomentations the inflammation was subdued, and the irritabi-

lity of the stomach removed, and then such means as were calculated to restore its secretions were used with advantage.

In idiopathic inflammation of the internal surface of the stomach, or when that surface becomes inflamed in the progress of dysentery, gout, or other diseases, I have often directed entire abstinence from medicine of every description, and from fluids even of the blandest nature, until the inflammation has been removed by bleeding, blistering, fomentations, &c. In truth the inflamed stomach is often incapable of retaining even a spoonful of cold water ; and at first every description of medicine produces an aggravation of sickness, vomiting, and general distress. In such cases I have repeatedly witnessed the good effects of restraining the patient from drinking, and of withholding medicine for one, or even two days. We can then, with advantage, administer calomel in doses of one grain repeated every hour, or of four or five grains with half a grain of the watery extract of opium every third or fourth hour, which we may alternate with a solution of Rochelle salts with soda, to which lemon juice may be added ; but before having recourse to these means of resuscitating secretion, we must make sure that we have sufficiently reduced inflammatory excitement. If thirst is urgent, as is often the case in inflammation of the mucous membrane of the stomach,—most painfully urgent it often is, it may be assuaged by one mouthful of water, or by putting a bit of ice in the mouth ; if there is

much *dry retching*, a drink, consisting of water, lime water and milk, in equal proportions, may be given, which, while it quenches thirst, will sometimes lessen the straining to vomit; if these things fail, we may try a remedy of an opposite kind, namely, weak lemonade, which will often give great relief.

The same method is applicable to excessive irritability of the stomach in continued fever, when that symptom arises from an inflammatory state of the mucous membrane of that organ, which may take place either with the epigastrium and hypochondria tumid, or without the slightest fullness of the abdomen.* In either case, before we prescribe purgative medicines, let us consider well whether they are likely to produce a *salutary* increase of secretion, or whether it would not be better, before having recourse to these, first to reduce the inflammation of the stomach by the application of leeches, fomentations, blisters, and enemata.

P. S. That the affection of the stomach, de-

* Very acute inflammation of the mucous membrane of the intestinal canal often exists without tension, or the slightest tenderness of the abdomen; we witness this every day in the dysenteric fever which at present prevails (Sept. 1826). In private practice, I have seen eight fatal cases of dysentery in the course of the last two months, in only one of which was there the slightest tenderness of the abdomen; there was no tension in any of them.

scribed in the first four cases, should have been fatal to six individuals in one family, is a fact the knowledge of which would lead one to inquire whether there was any thing peculiar in the constitution of the family. To such an inquiry, I can make no other answer but that four of the individuals in question, to my knowledge, had, at a former period, laboured under some strumous affection.

Where the tendency to struma is very strong, I have often known many individuals of a family affected with the same organic disease. In all the following instances, in which many members of families were affected with the same disease, there was an exalted strumous diathesis.

HYDROCEPHALUS.—I have known ten children out of eleven cut off by hydrocephalus, and several instances of the majority of a family perishing in a similar manner.

MANIA.—I. I know a family of six, in which four daughters and one son have been maniacal; the second son, the only one who has escaped, is affected with hæmiplegia.

II. In the families of three daughters and a son, the offspring of the same father and mother, the following cases of mania occurred :

Son, had one son maniacal.

1st Daughter, three daughters maniacal.

2d Daughter, one son maniacal.

3d Daughter, herself maniacal.

III. In a third family, four daughters were maniacal. All these cases, with two exceptions, were instances of periodic insanity.

EPILEPSY.—There is a family of my acquaintance in which an uncle, a niece by one of his sisters, and a nephew by another, have been affected with epilepsy. In other members of the same family hysteria has prevailed in its exaggerated forms, in those forms most apt to occur in strumous habits, in which it too often degenerates into epilepsy, catalepsy, and mania.

CREEPING PALSY.—The reader is, perhaps, not well acquainted with the disease which, in this country, is called Creeping Palsy. It is so called probably because it insidiously extends itself from one part of the body to another ; I shall, therefore, shortly describe its progress.

First, there is perceived numbness in the course of a nerve often in the sciatic, or in the ulnar nerve. This may exist for some months without any other symptom of disease, and indeed I believe that the disease often proceeds no further ; but fre-

quently, after some months, a slight defect, a *drag*, as it is called, is observable in one of the legs, which renders the patient liable to trip ; next an inability to use one of the hands in such ways as require combinations of the muscles of a more complicated nature ; for example, the patient cannot guide his hand into his coat pocket. The pulse will be found slow, the circulation languid, the expression inanimate, together with restlessness. Some defect of mental power is discoverable ; the apprehension is tardy, the speech less articulate, the words inappropriate, and the recollection of recent events not distinct. Then the disease proceeds more rapidly, the sphincters begin to fail, slight convulsions occur, the individual becomes hemiplegiac, or complete paraplegia takes place, with imbecility of mind, the convulsions become stronger and more frequent, and in one of these the scene closes.

I had intended to publish a paper on this disease, but have lost all my materials, save a case and a dissection ; the case is too long for the present. In the dissection, the medullary substance of both hemispheres of the cerebrum was melted down into a soft mass of the consistence of thick cream, through which large vessels were found to ramify ; the cortical part of the brain surrounding this substance was firm, and seemed condensed, so that the softened medullary mass appeared to be confined in a kind of cyst ; the inner surface of

the cortical part felt like a soft pancreas ; the corpus striatum of the right side (the left was the paralytic side) was internally converted into a substance similar to the medullary matter of the hemispheres ; that of the left side was natural.

In one family three sons, the only three, were affected with creeping palsy. In this family the strumous diathesis was exquisitely marked, being probably heightened by a circumstance which is never inoperative, namely, the intermarriage of near relatives—first cousins, which the father and mother were.

Finally, of consumption, which often sweeps away whole families, I need say nothing, as tubercular consumption occurs only in the strumous diathesis. I have known some families suffer much from scirrhus diseases, some from diseased heart, others from the more inveterate cutaneous affections,—ichthyosis, lepra, &c. some from hair lip, and other congenital deformities. In all of them I have discovered the strongest disposition to strumous disorders.

I shall now leave the reader to judge whether the foregoing facts bear upon the disease of which so many individuals of the same family were the victims ; it can scarcely be necessary to add, that I have often seen solitary instances of most of the foregoing diseases in families in which no decidedly strumous affection had to my knowledge occurred.

C A S E
OF
REMARKABLE PULSATION
IN
THE VEINS.

BY
CHARLES DAVIS, M. D.

**MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND, AND
SURGEON TO THE NORTH EAST DISPENSARY, DUBLIN.**

ON 21st June, 1826, I was desired to visit Margaret Connor, aged six years, residing at No. 49, Clarendon-street, whom I found labouring under symptoms of acute hydrocephalus.

She was much emaciated, and, upon inquiry, I learned that four months previously she became affected with hooping cough, from which she had never perfectly recovered, and that within the last ten days she had been suddenly attacked with a vomiting of bilious fluid, which still continued.

She now appeared listless, and regardless of sur-

rounding objects; her tongue was coated with a yellowish fur; she had complete loss of appetite for solid food, but took drink when presented to her, and, when questioned, complained of dull pain in the forehead; her pupils were somewhat dilated, but readily contracted upon the admission of light; her skin was hot and dry, and her pulse, which was somewhat irregular, beat eighty-eight in the minute, and was full, and pretty strong; her bowels were costive, and her stools, when procured, green and hydrocephalic.

An eruption of dark spots, larger than petechiæ, somewhat resembling purpura simplex, was scattered over the skin; and upon the chest and neck, a miliary vesicular eruption was observable.

What surprised me much in this case, and now induces me to lay it before the profession, was a pulsation in all the veins, distinct and well marked, synchronous with that of the arteries, and in the veins of the extremities, perceptible to the eye, even at the distance of two yards.

The veins were rather larger than is usual at her period of life, and pressure upon any of them stopped the pulsation between the part compressed and the heart, so that it obviously could not be caused by regurgitation from the auricle.

The pulsation in the part of the vein, towards

the extremity, was rendered much stronger, and more distinct, provided the return of the blood to the auricle was not completely obstructed, but if the compression was so strong as entirely to obliterate the calibre of the vein, that part of it, which became tense and distended with blood so far as the next valve, after a few seconds, lost the pulsation altogether.

The pulsation of the heart was somewhat stronger than usual at her age; the pulsation of the veins was softer than that of the arteries, and was completely stopped on compression of these latter vessels.

In despite of leeching, cold applications to the head, and blisters, combined with the exhibition of calomel, constantly repeated in minute doses to enable it to remain upon the stomach, and every other remedy which suggested itself to my mind, or was recommended by those of my medical friends who saw the case with me, (amongst whom was Mr. Peile, who kindly lent me his assistance,) it terminated fatally upon the 28th of June, on the evening of which day I made an inspection of the body, of which the following is an account.

The vessels of the pia mater, particularly towards the base of the brain, were somewhat fuller of blood than is natural, and the substance of the brain little, if at all, softer than is usual at this period of life.

The ventricles contained at least 4 oz. of transparent fluid, and the choroid plexus seemed pale, as if macerated.

The pericardium contained a small quantity of serous fluid, and the left ventricle of the heart was somewhat enlarged, and firmer than natural; all the other viscera of the thorax and abdomen were healthy.

The arteries had been injected, but presented no preternatural communication whatever with the veins, neither could any artery be discovered in the immediate vicinity of these latter vessels which could throw a doubt on the fact, that the pulsation had been continued from the heart, through the arteries and capillaries, to the veins.

ADDITIONAL CASES
FROM THE
MEDICAL WARDS
OF
THE MEATH HOSPITAL.

BY
R. GRAVES, M. D.
AND
WILLIAM STOKES, M. D.

CASE I.

**GANGRENE OF THE LUNG ; DILATATION OF THE
BRONCHIAL TUBES ; CAVITY IN THE RIGHT
LUNG, BRONCHITIS.**

**NOVEMBER 2d, 1826. Laurence Bardin,
ætat. 28, full habit ; thorax well developed.**

Had been for the last year subject to palpitations, cough, and pain in the sides. He stated that yesterday evening he had a rigor, with increased pains. Cough frequent ; expectoration

of a dark red colour; pulse 144. He lay on the right side. Breath very fetid; and there was a cadaverous smell from the whole body; countenance of a leaden hue; lips livid.

On percussion the right side was dull anteriorly, and on applying the stethoscope from about two inches above the mamma to the inferior portion of the lung, we heard at each inspiration a sound similar to that produced by the retraction of a piston; on expiration an obscure crepitus was audible. About the mamma there was cavernous respiration; gurgling and pectoriloquism.

Over the left lung; the respiration was puerile, with a slight crepitus about the mamma.

Diagnosis.—*Suppurative inflammation of the lower lobe of the right lung; a cavity anteriorly in the lower part of the middle lobe; slight inflammation of the lower part of the left lung.*

He was bled to $\frac{3}{4}$ x. Cupping glasses were applied to the right side, and afterwards a large blister. Small doses of calomel and hyoscyamus were ordered, with an abundant supply of warm diluents.

At the evening visit he was found much relieved; the pulse had fallen to 96; the cadaverous smell had disappeared; no expectora-

tion; the peculiar respiration in the superior portion of the right lung was not audible.

We now omitted the calomel and hyoscyamus; and as the skin was dry, small doses of antimonial powder, with a little calomel, were ordered to be taken every second hour.

Nov. 3d. He was found lying on the left side, which he stated he had not been able to do for the last six months. Expectoration about two ounces; purulent, sanious, and presenting the prune juice colour in some degree.

Thus he continued till the sixth, when a loud muco-crepitating rale was heard over the whole left lung: cavernous respiration evident over a more considerable portion of the right lung, with confused pectoriloquism; posteriorly the murmur was natural; crepitus in the antero-superior portion.

Diagnosis.—*General bronchitis of the left lung; excavation in the right lung increasing.*

7 P. M. Complains of violent pain of the left side; pulse 110, small; distinct crepitus mixed with sonorous rale, over the postero-inferior part of the left side.

Diagnosis.—*Pleuro-pneumony of inferior part of left lung; no effusion into the cavity.*

He was leeches freely, and took a large dose of Dover's powder.

Nov. 7th. He was found lying on the right side; he had passed a good night, and the pain was greatly diminished; he expectorated some blood. The crepitus was less audible, and of a more humid character; sound on percussion over left mamma was natural; cavernous respiration less distinct.

8th. Last night he expectorated a large quantity of blood suddenly; odour of the breath more offensive; gurgling evident over a space nearly four inches about the right mamma.

He now took pills of opium and sulphate of quinine; a small quantity of wine was also allowed, and a seton was inserted over the cavity.

9th. Felt much better; expectoration resembling the juice of prunes mixed with grumous blood.

In the evening, however, we found him in a severe rigor, which lasted for nearly an hour, and was not followed by perspiration. He had another rigor on the evening of the 10th; and died on the 11th.

DISSECTION.

Body fat and muscular ; some œdema of the right leg.

On raising the sternum the left lung collapsed, and on a superficial view appeared healthy, and free from adhesions. The right lung felt solid, and completely filled the right cavity of the thorax; the adhesions to the pleura were so strong, that in detaching the lung the pleura costalis was torn away. A perpendicular incision being made on the antero lateral face, the superior portion was found inflamed to the first degree for about an inch downwards, when it passed into the second in spots, between which the substance of the lung was soft, and of a reddish yellow colour, but still crepitating, giving to the lung the appearance of a piece of Egyptian sienite. On the antero interior line, about three inches from the summit, the lung felt solid, and the surface of the incision was of a dark grey colour, and motley appearance. An anfractuous cavity was then discovered, having three prolongations or horns, one extending upwards, another downwards and backwards, and a third to the right side. A yellowish semifluid matter flowed slowly from the lateral prolongation ; but the other parts of the cavity were filled with a substance resembling putrid flax, and exhaling an exceedingly foetid

odour. Several dilated bronchial tubes opened into it from behind; its parietes were firm, but irregular, and lined with a cartilaginous membrane, which extended to the neighbouring bronchial tubes. Bands of condensed pulmonary tissue were observed in several places forming elevations on the parietes. Below this cavity we found a solid mass, about the size of two walnuts, in which a small cavity was found, not communicating with the bronchial tubes. It had no lining membrane, and the substance of the lung around was in the state of grey induration. Most of the bronchial tubes in this lung were dilated, forming culs de sac at their terminations, where they were nearly as wide as at their origin. The lining mucous membrane was of a deep red colour, soft and swollen; no ulceration could be detected.

On detaching the left lung from the diaphragm, the fingers of the operator entered the substance, and a large cavity, capable of containing a moderately sized apple, was found; of a completely gangrenous appearance; from its sides a blackish sanies flowed in great abundance. The edges of the cavity were ragged, and in a state of deliquescent sphacelus; no bronchial communication could be found, but the affected part was surrounded by a band of hepatization, beyond which the tissue was healthy and crepitating.

The mucous membrane of the bronchial tubes

was almost black ; this appearance extended to the trachea, and gradually fading, terminated at the rima glottidis. Some adhesions were found, and the inferior portion of the pleura was highly vascular. The right ventricle was enlarged, soft and pale ; the pericardium presented the white patches of Laennec without adhesions.

The bronchial glands were greatly enlarged, soft and pale. The liver, kidneys, and spleen, were much increased in size. The intestinal mucous membrane healthy.

We beg leave to draw the particular attention of our readers to this case, which is so remarkable in many points of view. And first, it is interesting on account of the great rarity of the disease. Laennec, Andral, and Bayle, all unite in setting down the uncircumscribed gangrene as one of the rarest of pathological phenomena. Laennec states that he met with it but twice in the course of twenty-four years observation, and that but six cases occurred in the hospitals of Paris during that period. Hence we may form some idea of its great rarity. The cavity in the left lung answers in every respect to the description given by this illustrious author of uncircumscribed gangrene. (See vol. 1, p. 443, of his last edition.)

It may be remarked that we did not prog-

postulate the occurrence of this destruction of the lung before death; but let it be observed, that the part affected rested on the diaphragm, in the situation of all others the most difficult to detect pulmonary disease; and also, that after the cavity had formed, the bronchial communication was completely obliterated by the band of hepatization found after death. In all probability the cavity was formed with great rapidity, and about the time of the first rigor, which preceded his death but two days. The state of the right lung was evidently caused by a long continued morbid process. This position we would prove: 1st, By the condensation of its tissue, which in many places answered to the grey induration, a state of parts only brought about by a very chronic inflammatory action. 2dly, By the circumstance of the bronchial tubes being found so universally dilated. And 3dly, By the occurrence of a cavity lined with a strong and semi-cartilaginous membrane, which morbid structure extended itself to the neighbouring bronchial tubes. This cavity, evidently formed for a considerable length of time, could only have originated from one of three causes, viz. tubercular suppuration, pneumonic suppuration, or gangrene. The constitution of the man, the appearance of the cavity, and the complete absence of tubercles in other parts of the lung, render the first supposition highly improbable. Being unacquainted with the symptoms which attended the formation of this cavity, we have no guide to assist us

in distinguishing whether it had originally been owing to true pneumonic suppuration, or to gangrene. There are but two ways of accounting for the matter found in the cavity. It was either mortified pulmonary tissue, or the product of a peculiar secerning process from the parietes of the cavity itself. If we adopt the first supposition, it is difficult to explain how it could have remained so long in the cavity, especially when we recollect the free bronchial communication.

It is a circumstance well worthy of remark, that notwithstanding the intense inflammation of the tracheal and laryngeal mucous membrane, the patient never complained of sore throat, or had any affection of the voice.

CASE II.

GENERAL PULMONARY APOPLEXY.

John Mullaly, a butcher, ætat. 45, full habit.

For the last six months has been affected with cough, mucous expectoration, and some pain in the chest; but these symptoms were not so severe as to prevent him following his laborious occupation. During the last six weeks his complaints increased in severity. He had a dull pain, with sensation of weight between the scapulæ, and palpitations on exercise. On the day of his admis-

sion he was working in his stall, when he was attacked with an unusually severe fit of coughing, during which he expectorated a large quantity of fluid frothy blood, which nearly produced suffocation. He was brought to the hospital, and the next morning the chest was examined by Mr. Leringe, the resident pupil of the hospital, and the following observations made:

Strong broncophonia, with diminished respiratory murmur over the postero-superior part of the right lung, the sound is dull on percussion, where anteriorly the left lung sounds well, but the respiratory murmur is not at all distinct; action of the heart strong, and heard over the right side; no indication of disease of the valves.

From these observations we thought it probable that a considerable part of the right lung was in the state of engorgement, termed by Lænnec 'pulmonary apoplexy;' that emphysema existed in the left, and that probably there might be hypertrophia of the heart. The patient was removed to the medical wards, where the next day we made another observation. We now found the respiratory murmur clearly audible over the left lung, accompanied by a loud sonorous rale. The broncophonia and diminished respiration in the right were as on the preceding day; he had no fever, but the pulse was quick and full.

Diagnosis.—*Pulmonary apoplexy, chiefly affect-*

ing the postero-superior part of the right lung ; no emphysema ; bronchitis ; possible hypertrophie.

He was bled, and ordered $\frac{3}{4}$ ss of the infusion of digitalis three times a day.

On the next morning he appeared to be much better ; the pulse had fallen ; no bloody expectoration, and his spirits were excellent at the prospect of returning health.

The sonorous rale continuing, he was ordered a mixture with some tartrate of antimony. He continued well for a few hours, when, in the act of talking to some of the patients, he was seized with cough, and, leaning out of the bed, he threw up about two quarts of blood, and died asphyxiated.

DISSECTION.

On opening the thorax, the lungs did not collapse ; they had a somewhat doughy feel, and presented no pleural adhesions ; the colour, as seen through the pleura, was of a deep red. The postero-superior part of the right lung was found solid, tough, of a dark red colour almost approaching to black, and of a completely homogeneous structure ; no trace of blood-vessels, of the areolar structure of the lung, the cellular divisions, or black pulmonary spots, could be detected. The same appearance was found more or less throughout the whole posterior part of the lung, and in

one spot, about the size of a walnut, in the infero-anterior portion. Anteriorly and superiorly the pulmonary tissue was of a reddish yellow colour, presenting many spots of the hæmoptysical engorgement. The lung floated in water, and there was no distinct line of demarcation between the healthy and diseased portions.

The left lung was full of spots of the same affection, about the size of hazel nuts, many of which lay superficially, and could be distinguished through the pleura. About the root the engorgement was very considerable; anteriorly there was a patch, which terminated by a well defined line. The surface of the incisions into these spots was granular, and in colour exactly like a clot of blood. The intervening pulmonary tissue was of deep reddish yellow colour. The heart was not enlarged. Many of the bronchial tubes in both lungs were found to contain polypi, formed by the fibrin of the blood, effused into them during life. The presence of similar polypi in the bronchial tubes of the left lung, after the first attack of the complaint, may account for the non-appearance of the respiratory murmur over that lung at the first observation. A substance was expectorated by this patient, which, being coloured by blood expectorated at the same time, had the appearance of a small piece of lung; it felt also exactly like healthy pulmonary tissue, and, when examined with the microscope, might easily have been mistaken for pulmonary sub-

stated; it was nothing more than a piece of fibrin rendered porous by the passage of air through it during its coagulation in the bronchial tubes.

The spleen, liver, and kidneys, were all gorged with red blood.

The brain presented nothing remarkable.

Of this formidable disease three cases have occurred to us in the course of the last year. The first was of a stout man, who presented himself among the extern patients of the hospital, labouring under great oppression at the chest, with cough. By examination with the stethoscope, we found solidity of the inferior lobes of the right lung, and not being able to obtain an accurate history of the case, set it down as hepatization. He was bled and blistered, and on the third day felt greatly relieved; on that evening we heard a loud gurgling in the affected part, and while we paused to consider the cause of this phenomenon, he suddenly expectorated a large quantity of frothy blood, and immediately ceased to breathe. No dissection was allowed. It is worthy of remark, that in this case the pulse was perceptible for about twenty minutes after respiration had ceased.

The next case was of a man who came into the hospital with a large abscess in the neck, which was opened by Mr. Porter. In a short time it was found that a fistulous communication

had been formed between the cavity of the abscess and trachea, as at each inspiration air was expelled from the opening in the nuch. He had some cough. During that night, to use the words of Mr. Porter, "he was seized with a paroxysm of "cough, blood spouted from the mouth, and "oozed in small quantity from the wound, and "after a struggle of a few minutes, he died."*

In the description given by Laennec of pulmonary apoplexy, it is laid down that there is a well marked line of demarcation between the affected portion and the healthy pulmonary tissue. In our case however, this did not exist, the engorged generally passing into the healthy portions by imperceptible transitions. It is also remarkable on account of its extraordinary extent, as in the cases described by the above illustrious author, the disease occupied but a small portion of the lung. The description thus given by him is insufficient, as in our case the disease was of great extent, and not limited to one part, scarcely any portion of either lung being free from spots containing extravasated blood. It appears therefore, that in the last and fatal attack, the hæmorrhage occurred simultaneously in a great number of separate points throughout the pulmonary tissue.

* Observations on the Surgical Pathology of the Larynx and Trachea, by W. H. Porter, Dublin, 1826.

DISEASES OF THE SKIN.

We have at present in the Meath Hospital, a young girl named Eliza Cosgrave, who was admitted on the 25th of last October, labouring under the severest form of psoriasis, affecting not only the scalp, face and extremities, but almost the whole surface of the body. A most abundant desquamation of silvery white scales was constantly taking place, so that handfuls of them could be gathered in her bed every morning. Her skin was almost universally of a bright red colour and very itchy. Pulse 100, strong; she complained of thirst, but had a good appetite, and appeared in other respects healthy...

Venesection was twice performed; she was put on low diet, and in the course of the first three weeks leeches were repeatedly applied to the most inflamed parts of the surface. During this time she took daily a pint of decoction of sarsaparilla, and about two drachms of supertartrate of potash. When the violence of the cutaneous inflammation was subdued by these means, we had recourse to the use of sulphur internally, together with warm baths, containing sulphuret of potash. For some time the disease seemed to diminish under this method of treatment, but it afterwards appeared stationary. It was then judged advisable to apply strong stimulants to the skin, and we had recourse to tar ointment,

and afterwards to a mixture of tar and citrine ointments. The parts to which the ointment was applied were well cleansed every day, either by means of diligent washing with soap and water, or with water containing a solution of caustic potash, as directed by Dr. Duffin. The warm baths and the internal use of sulphur have been continued; she uses a diet consisting chiefly of bread and milk, and is now almost completely well.

In squamous diseases, more limited in their extent, we have successfully used a similar method of treatment; except that in such cases general bloodletting may be often dispensed with, as the repeated application of leeches to the affected parts is sufficient to subdue the active inflammatory stage of the disease. The only difficulty which occurs in the treatment of squamous diseases, is to determine the proper period for leaving off the local antiphlogistic applications, and changing them for stimulants. The latter, if applied too soon, will aggravate the disease, and when this is found to be the case, they should immediately be laid aside, and the application of leeches, poultices, and cooling lotions again be resorted to.

As yet we have met with no case of scaly disease which has resisted this simple method of cure, and have not therefore found it necessary to have recourse to the internal use of either arsenic or corrosive sublimate, as recommended by Dr. Duffin.

Before the publication of Dr. Duffin's paper on squamous diseases, we had been in the habit of applying leeches to the affected parts of the skin; our knowledge concerning the true nature of scaly diseases was much increased by the perusal of Dr. Duffin's remarks, and since that time we have been enabled to cure these diseases with greater certainty, and in a shorter time than formerly.

We have also extended the application of these principles to the treatment of chronic pustular and tubercular diseases, and with considerable success, as may be seen by the following cases.

John Nowlan, aged 16, was admitted into the hospital early in December 1825, covered with the most aggravated form of general porriginous eruption. The head, face, elbows, hands and wrists, were particularly affected; on the hands there was the most enormous accumulation of scabs, arising from the discharge of numerous pustules. The nails were thickened, contorted and split. A continual steam arose from his arms and hands, and the odour of the body was most disgusting. Indeed it would be difficult to convey in words a proper idea of his loathsome appearance. The eruption chiefly affected his scalp, face and extremities; on the trunk there were but few pustules. The skin of the trunk was however red, rough with papulæ, and the cuticle fell off constantly in dry scales. The skin of the extremi-

ties was red and hot. He had occasional rigors and constant thirst, but was not emaciated. Under these circumstances it was determined to treat him on the antiphlogistic plan. He was in consequence bled twice to a considerable amount, freely purged, and used several warm baths; by those means he was greatly improved, the skin of the body had lost much of its inflammatory redness, but the hands were still loaded with the dried scabs, red, and constantly exhaling a dense vapour. They were leeches, and warm poultices applied over the recent leech bites. He continued using the warm bath, and took an electuary of the super tartrate of potash, with sulphur. In the course of a week the bleeding and leeching were again repeated with great benefit; so much indeed had the inflammatory symptoms subsided, that it was thought adviseable to order him small doses of the arsenial solution. Under this plan he continued for some time, but the symptoms not yielding, this medicine was omitted, and he took the infusion of dulcamara without any perceptible benefit. The antiphlogistic plan was then resorted to, the head was shaved and poulticed, he was freely purged, and took several tepid baths; by this treatment every inflammatory symptom subsided, the head became clean, and the skin lost its red colour, but was still covered with small white scales in such abundance, that when he took off his shirt, a cloud of them would rise around him. The hands were still covered with thick scabs, but had lost their inflammatory

appearance. The pulse was slow, and the bowels freely open. The phlogistic diathesis being thus somewhat subdued, he used the sulphur bath, and an ointment consisting of equal parts of the dilute citrine and tar ointments was applied to the hands and head, with the greatest benefit; the scabs fell off, and a fine new cuticle covered the palms of the hands. Thus he continued for about ten days, during which time he had been put on a more generous diet. He now experienced a return of the eruption over the whole body, especially on the breast; it came out in the form of minute pustules, which quickly dried, leaving the surface covered by thin scabs. The skin was hot and red, and the pulse indicated great activity in the circulation. He was ordered to be bled, and was again freely purged. The blood was *buffed and cupped*. Great relief followed this operation. The skin lost its red colour and itchiness, and the pulse was reduced in strength and frequency. He was ordered to take no animal food. The baths were repeated, and his bowels kept freely open by the electuary of cream of tartar and sulphur. Under this treatment he rapidly improved, and after some time was even enabled to recur to the use of the tar and citrine ointments, which together with warm baths, completed the cure in a few weeks. He is at present (December 15, 1826), in good health, and quite free from the least trace of cutaneous eruption.

A similar treatment we have found efficacious in a case of sycosis menti, and also have used it with very marked success in porrigo of the scalp, or scald head. Recent cases of porrigo yield readily to the application of leeches to the head, and poultices, repeated until the inflammation of the scalp is subdued. This may be known by the decrease or disappearance of the heat, redness, and soreness of the scalp. As the formation of the pustules depends on the inflammation, their developement will cease with the removal of their cause, and the cure may be then easily completed by the judicious use of the tar and citrine ointments. It is scarcely necessary to remark, that the first step in all cases of porrigo must be cutting the hair, and the diligent use of emollient poultices, alkaline lotions, &c. until the scabs are softened and removed, after which the head should be shaved. Even in cases of long standing, we have found the greatest benefit to arise from leeching the head, and now almost always commence the treatment in this way. Recent cases however require a more frequent repetition of the leeches, and a stricter antiphlogistic general treatment than chronic cases.

In several cases of scald head, where circumstances prevented us having recourse to leeches in the first instance, we have substituted, with advantage, poultices, with an ounce or two of liquor aest. Plumbi. In children this will often succeed in reducing the high inflammatory action. In

one case only did the continued use of the acetate of lead produce symptoms like the colica pictonum.

In every instance let the practitioner remember that the formation of pustules on the scalp is the result of an inflammatory process, be the case recent or chronic, and of course ought to be met by local antiphlogistic remedies. When the inflammation has been reduced, he will find no difficulty in restoring the healthy condition of the skin by means of stimulants. As yet we have not found it necessary to use any other than the tar and citrine ointments, with the alkaline wash. We here only speak of the treatment of the cutaneous disease, which, as it may occur in very different constitutions, must require a constitutional treatment, varied with the patient's peculiarities as to health, &c. In strong healthy children cooling aperients and a spare regimen will much facilitate the cure. In the weakly and emaciated, change of air, attention to the bowels, a more nutritious diet, and a judicious use of tonic remedies, may be combined advantageously with the local antiphlogistic plan, and in such the cure of the cutaneous complaint, by removing a constant source of irritation, will materially tend to restore the health.

There is no doubt that the sudden drying up of cutaneous diseases has occasionally produced dan-

gerous internal complaints. This danger does not seem to attend their cure by the antiphlogistic treatment, which, when prudently conducted, *diminishes the tendency to inflammatory action in the constitution, and does not, like merely local applications, destroy it in one part only to re-appear in another.*

PROPAGATION OF INFLAMMATION BY CONTIGUITY.

In the dissection of a fatal case of enteritis, we observed that the omentum, which lay extensively over the intestines, was healthy, except where it was in contact with the inflamed portions of the intestines. These portions were circumscribed and limited in extent, some highly vascular and red, others in a gangrenous state, and one actually perforated. The perforation was very small, not exceeding a line in diameter. The inflamed portions of the omentum were very vascular and red, about the size of a dollar, and *lay exactly over the inflamed portions of the intestine.* It is to this correspondence in their situation with the inflamed parts of the intestine, that we wish to direct the attention of our readers. Similar facts have been frequently observed in diseases, but, as far we know, they have never been satisfactorily explained. Thus when a portion of the pleura pulmonalis is much inflamed, a portion of the pleura costalis corresponding, or opposite to it, is always found to be also inflamed. When, on the other hand, inflam-

mation spreads from the intercostal muscles to the lungs, as in the conversion of pleurodynia into pneumonia, it does not traverse the pleura, in order to reach the lungs, by following the reflection of this membrane over them, but passes at once, and directly from the pleura of the ribs, to that of the lungs, between which there was previously no direct communication.* To this circumstance is owing the adhesions between serous membranes, so readily formed by inflammation, for when a part of one becomes inflamed, the portion of the other, in contact with the inflamed parts, assumes also an inflammatory action; and lymph being thrown out by both, a false membrane is finally formed, not less intimately connected with one than with the other.

In enteritis, we have repeatedly observed that the peritoneum lining the abdominal parietes is most inflamed in those parts which had been in contact with the most inflamed portions of the intestines. Another very important analogous fact was observed by Dr. Wilson Philip, in his Treatise on Indigestion. In the second stage of that disease, the pylorus frequently becomes inflamed, producing tenderness in the epigastrium, (Page 105); and as the pylorus, he observes, “lies with the thin edge of the liver upon and in contact with it, the inflammatory process is communicated to the thin edge of the liver, and

* See Wilson Philip on Indigestion.

“ thus inflammation of the liver is occasioned, and
“ terminates in evident enlargement and tender-
“ ness of that organ.”

We venture to propose the following explanation of these facts. When a portion of a serous membrane becomes inflamed, it is rendered highly vascular; it becomes at first dry and rough, but afterwards exhales either a morbid fluid secretion, or coagulable lymph; there is some reason to believe that its temperature is also increased. Now in this state of things, that portion of the opposite membrane which corresponds to it, is thus exposed to the contact of a membrane, whose *sensible properties* are altogether altered from their natural state, and which may therefore be now considered to be as it were a *foreign body*, which presenting a surface quite different from that to which the sensibility of the opposite membrane had been accustomed, must of course act as a stimulus to it, and thereby excite in it an inflammatory action. This explanation seems at least more satisfactory than Mr. Hunter's sympathy of contiguity.

FATAL CASE OF SLOUGHING OF THE MOUTH AND PALATE FROM A SMALL DOSE OF CALOMEL.

Ellen Potts, aged eleven, was admitted into the Meath Hospital on the beginning of October, 1826. She laboured under symptoms indicating an acute inflammatory affection of the trachea,

for which it was deemed advisable to administer calomel. In the course of twenty-four hours she took eight grains, when her mouth became affected, and the calomel was discontinued. During the next two days the usual symptoms which attend violent salivation were observed, but in a very aggravated form. The inflammation and soreness of the mouth and throat were excessive, and the integuments of the face and neck were much swollen. This inflammatory swelling of the face increased rapidly, and was most remarkable about the mouth, as is usual in such cases, producing great deformity. About the fourth day small ulcerations commenced at the angles of the mouth, which rapidly increased, and finally were converted into large sloughing ulcers, causing extensive destruction of the lips and cheeks. A sloughing ulcer was at the same time formed on the palate, attended with a disgusting fetor. None of the remedies employed seemed to be of the least use, and the patient died on the eighth day after the exhibition of the mercury.

In a few days after the occurrence of this melancholy event, we witnessed a similar case in a private patient of a very respectable physician, who had prescribed calomel for a child of two years of age; after taking six grains in divided doses, the mouth was affected, ulceration followed in the course of a few days; but in this case the destructive process was not nearly so rapid in its

progress or frightful in its appearance. The child survived for about a fortnight.

Having reflected on the symptoms which attended these cases, and the inefficiency of all the usual remedies, we were determined to proceed on other principles should another case present itself to our observation, and we laid it down as a *rule that all cases of sudden and violent affection of the mouth after small doses of mercury* require immediate attention and care.

Not many days had elapsed, when the application of half an ounce of mercurial ointment was directed to the head of a girl in the convalescent ward, for the purpose of destroying pediculi. She happened to have porrigo capitis, causing excoriation and sores on many parts of the scalp, and to this circumstance is probably to be attributed the extraordinary effects of a single inunction. Next day we found her mouth affected, and before three days had elapsed, the inflammation about the jaws, face, and mouth had made a degree of progress not less formidable than had been observed in the first case, so that we had every reason to fear a similar result. Looking on the occurrence of the sloughing ulcerations as a consequence of previous excessive inflammation of the parts, we endeavoured to prevent their formation by moderating the inflammation. This was accomplished by *frequently repeated application of leeches* to the most swollen parts. The

bleeding from the leech bites was encouraged by emollient poultices. None of the stimulating gargles usually so injudiciously recommended in excessive salivation, were allowed, and the anti-phlogistic regimen was enjoined.

The beneficial effects of this treatment were very satisfactory, and quickly averted the threatened danger: we have since been informed by Dr. Cheyne that he has been in the habit of applying leeches to the jaws and cheeks, for the purpose of diminishing excessive salivation.

CASE

UNUSUAL CONSTIPATION.

BY

JOHN CRAMPTON, M. D.

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COLLEGE OF PHYSICIANS, PHYSICIAN TO STEEVENS'S
HOSPITAL, &c. &c.

IN the case which is the subject of the following paper, constipation of the bowels, to a most extraordinary degree, has existed for years, and still continues. Such an occurrence must suggest to the physiologist and to the practical physician, how easily some individuals fall victims to disease, even though no very material change of structure may have taken place. On the other hand, they must have been struck with surprise to see life prolonged where many, and even most of the important viscera concerned in carrying on its functions, are disorganized. Perhaps the time during which the injury is sustained, determines the event, whether it is to be fatal or otherwise, more than the quantum of injury suffered. A disease coming

on suddenly will carry off a patient in a few days, whereas another invalid will endure more, both as to actual suffering, and to destructive processes in the viscera, than the former, provided the disorder is not quite so rapid in its advance. Inflammations of various organs and textures have frequently extinguished life within the period of two or three days; this has been exemplified in inflammation of the brain, lungs, heart, and abdominal viscera, even though medical aid was obtained almost immediately on the first attack; whereas we again see that inflammations, and their sequelæ, in the breaking up and partial destruction of organs, will take place, and yet the patient may survive for months and years. How often do we meet with chronic inflammation of the brain, and even partial suppurations in that organ, remaining for years? How often do we see patients existing with only a small portion of sound lungs? How frequently do we observe the heart altered considerably in structure, and yet patients endure the sufferings incidental to that state for a number of years? The same may be said of the abdominal viscera; and each of these positions could easily be proved by the recital of cases illustrative of what has been asserted, were not the truth of them known to all medical readers, so as to make it unnecessary to enter into such a detail. Independent of this, however, there may be a certain idiosyncrasy, which resists the tendency to death in all disorders, which most medical men must

have observed, as well in fevers as in other disorders ; this may have enabled several to struggle through attacks of illness which were considered almost hopeless. But what ought most to excite our amazement, is to see a feeble and imperfect constitution, that had nearly sunk under a form of disease seemingly hopeless, afterwards endure such a suspension of the natural functions, as must to every appearance prove fatal within a very limited period.

The subject of the following case, a slender, but originally healthy and active young lady, had *Scarlatina* several years since, in so slight a form as scarcely to require confinement to bed, but her convalescence was slow, and was followed by a severe pectoral complaint ; this she contracted in her exertions to attend the other members of her family. She became emaciated, and there was every reason to apprehend the rapid advance of phthisis. The medical treatment did little more than mitigate or arrest the progress of the symptoms ; indeed consumption seemed inevitable. She was removed to Mallow, where she spent the winter and spring. A considerable amelioration was the result of this measure, but still she was completely a valetudinarian, retaining her emaciated appearance. Her cough continued, attended with a heavy expectoration, and aphthæ were occasionally seen in the mouth and fauces ; the tongue was sore and red, and not unfrequently a troublesome diarrhœa occurred ; the catamenia

continued regular. She seldom left the house, and in cold weather rarely even her chamber. She required constant medical guidance, so that few days elapsed without my seeing her. In this way her health continued nearly stationary for about seven years, except that every now and then, on catching fresh cold, she suffered a temporary aggravation of her pulmonic disorder.

In February 1819, during a short absence of mine from Dublin, she was attacked with a severe diarrhoea, attended with considerable pain. For this she would take no remedy, as her physician who alone was supposed to know her constitution, was absent. This diarrhoea, which probably was attended with inflammation of the mucous membrane of the bowels, ceased after some days, but was exchanged for a costive state, accompanied with considerable pain in the abdomen. In fact peritoneal inflammation, first in a chronic, afterwards in a subacute form, appeared to have been established, and on my return to town I had the mortification to see how little had been done, and how much time had been lost in a case of great urgency. Her illness now assumed such a threatening aspect, that I thought every night would have put a termination to her sufferings. Discharges from the bowels were rarely procured, and these with considerable difficulty; but though at this time no absolute obstruction appeared to exist, there was reason to apprehend that extensive adhesions had taken place between the convo-

lutions of the intestines. She took little sustenance, rejecting almost every thing from her stomach, and being emaciated to the last degree, altogether confined to bed, and unable to assist herself. There was every prospect at this juncture that death must soon put an end to her misery. The result however turned out otherwise. The symptoms remained stationary for a considerable time, and circumstances made it necessary that her family should remove to about fifty miles from Dublin. As the canal extended near their new residence, I advised that she should be taken from her bed and carried on a mattress to the boat, where she was placed in a bed, and she actually bore the journey well, to the surprize of her family. After she was settled in the country she continued to keep her bed, the abdomen was tender and inflated, she seldom had a stool more than about once a week; all medicines were rejected from the stomach; the greater part of her sustenance, which was all liquid, shared the same fate; what she brought up was offensive in the extreme, and often evidently stercoraceous; in some instances it had a urinous taste and smell, little urine being either secreted into or passed from the bladder. Notwithstanding the uncomfortable condition in which she existed, after a little time it became evident that she bore her distress and pains with more facility. The symptomatic feverish state subsided, the pulse became natural; she took liquid food in sufficient quantity, there was less emaciation, the vomiting

was less severe, but she threw up every day, and the intervals between the times of emptying the bowels became longer, the urine was seldom passed, and then with pain, and in very small quantity; the catamenia were still regular. She even appeared to have regained a little flesh, and slept well. Her usual sustenance was tea, toast, milk and gruel, but no solid food; no swelling now or fullness in the abdominal region; she has either lost the use of her lower extremities, or is averse to use them. She is now in her 37th year, and has been in the state described for the last seven years. For the last eight months she has had no passage from her bowels, and only two or three during the preceding year, and she scarcely passes any urine. There is no possibility that any deceit can be practised, as she sleeps in a room with a confidential attendant, and is watched closely by her parents and her sister. She never makes the slightest locomotive exertions with her lower limbs, but has the complete muscular power of the upper extremities. She is carried every day into the drawing room after she has taken her breakfast, placed on a sofa, where she remains until she is again replaced in bed for the night. Her disposition, which formerly was cheerful and gentle, has become peevish and irritable. It is quite impossible to induce her to comply with any direction or measure which is proposed for her relief. She takes no medicines, she makes no effort to amuse herself either with work, books or music, although formerly much engaged in such occu-

pations. She never appears to have had any apprehension of danger, but always to have entertained hopes of recovery, as phthisical patients are known to do.

I recollect a case somewhat resembling this in a patient named Anne Free, who was under my care for a considerable time in Steevens's Hospital, but I have lost the notes of the case. In her, both the bowel and urinary discharges were nearly suppressed. When she had a stool it was considered quite an extraordinary occurrence, and she never passed urine except when relieved by the catheter. She vomited occasionally excremental matter, and for a considerable time, when no urine appeared to be secreted, she threw up a fluid of a urinous taste and smell. She lived for several years. By persevering with injections at proper intervals, the bowels were cleared, and the constant use of the catheter seemed to restore in some degree the secretion of urine, but she ultimately sunk under the pressure of disease in the bladder. After death the colon was found immensely distended, whilst a lower portion of that intestine was contracted to so small a dimension as to amount to a stricture scarcely pervious. The bladder was thickened, and otherwise diseased in structure.

Another case like those just described, of an unmarried lady in a neighbouring county, must be well known to many of the Medical practitioners in Dublin who have been consulted about her. It

is alleged that for several years she rarely has had any discharges, either from the bowels or bladder, and vomiting has generally followed at an interval after her meals. For a long time, however, she has been able to devote a portion of her time to work and reading, as well as to the comforts of the poor in her neighbourhood, and to drive out almost every day in a carriage.

With respect to the case which I have first related, it may be observed, that the more it is considered the more surprising it must appear, even to those who are experienced in that class of disorders, wherein suppressions of the contents of the bowels or bladder occur. To show how quickly some cases of intestinal obstruction terminate, I may be allowed to make the following short statement of an hospital patient, a young robust man, who died after four days illness. There was a dull pain in the left iliac region, immediate vomiting of every thing swallowed, constant moaning with total loss of sleep, no passage from the bowels, the pulse being natural until the disease was near its close; these were the prominent symptoms. It was conceived that some mechanical obstruction prevented the natural action of the bowels. This was evinced by an examination after death; a slight twisting or turning of a portion of intestine over an old band of adhesion between the colon and parietes of the abdomen was observed; this formed a knot, which was easily pushed aside, but which during life constituted an insuperable obstruction. Every organ

was sound, and there was scarcely any sign of recent inflammation ; the adhesive band was the sequel of an old and painful attack he had experienced in the same quarter some years before. He sunk, the powers of life being exhausted. But why death should take place so soon when there was no unsoundness, and no material change of structure, and why life should be protracted in the other cases, it is not very easy to say, except that the suddenness of the attack in the man's case, and the slow progress of the symptoms in that of the females, might perhaps supply a reason. It may be a question, do females bear these disorders of suppression better than males ? All those conversant in diseases where suppression of urine takes place, are aware that most patients of this description very soon die apoplectic except relief is soon afforded. The vicarious urinous vomiting which occurred in the females, as intimated above, appeared to avert this termination. But time and habit seem to new-model our constitutions, as is observed with respect to climate, and render them able to bear what *a priori* we could not suppose they were capable of enduring.

It is not unlikely that the lady whose case is the chief subject of this paper, has the calibre of some part of the lower intestine diminished, or in a state of close stricture, whilst the greater part of the colon is enlarged and converted into a pouch, that the inflammation which she suffered, first of the mucous coat of the bowels, and afterwards of

the peritoneum, laid the foundation of those important changes which have occurred. This view of the subject appears to be confirmed by the examination after death of Anne Free. As long as the stercoraceous vomiting and the throwing up of a urine-like fluid continued, some account might be given of the ingesta; aided by an active absorption they might have remained long enough to have furnished nutriment before they were rejected; but what are we to say now when no stools are passed, no vomiting occurs? What becomes of the excrementitial part of the alimentary mass? Is it all disposed of by absorption or by insensible perspiration? The skin is natural in color and in temperature,—if any thing more dry than usual. But these questions, I apprehend, however curious, must remain unanswered, until time shall unfold to us more thoroughly the laws of the animal economy.

ACCOUNT
OF
AN UNUSUAL VARIETY
IN THE
FEMORAL ARTERY,
BY
JOHN HOUSTON,

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FEW blood vessels in the human body of such magnitude as to render them objects of surgery, present so little variety in their course and distribution as the femoral artery, which circumstance has given a kind of security in undertaking the operation for popliteal aneurism, (the one most frequently performed on this vessel), that prevents the surgeon from making any allowance for such occurrences, or from looking to them as a source of failure.

The only deviations connected with it, that I believe have been described, or at all are taken into account, relate to its magnitude, or the point at which it gives off the profunda; and these being of such a nature as would not be likely, in any case, to involve the success of the

operation, as performed at the present day, are consequently little regarded: the following variety, therefore, will I am sure be deemed not only curious but instructive, as it differs from any hitherto published, and as it may serve to lessen the security which rests on this artery's supposed undeviating course. The subject of it was an elderly woman in whom the other bloodvessels, as far as I could observe, were regular in their distribution.

The femoral artery at its commencement was of the ordinary size, and in the place where it is always found. About one inch and a quarter below Poupart's ligament, it sent off the profunda, which at first descended behind it, and not as usual along its outer side. This branch formed a short trunk which passed inwards, and soon furnished the circumflex, and perforating arteries, with several smaller twigs that went to the groin and its neighbourhood.

About half an inch from the origin of the profunda, viz. one inch and three quarters below Poupart's ligament, the femoral artery divided into two branches, an internal and an external, the former of which was somewhat the larger; but though either of them taken singly, was less than an ordinary sized femoral, yet both combined would have made a vessel of larger calibre. These branches lay together on the same plane,

and in such order descended parallel, as far as the opening for them at the lower part of the thigh in the tendon of the triceps, at which point precisely they reunited to form the popliteal artery.

These vessels bore the same anatomical relations to the parts in their vicinity, and followed exactly the same course as the femoral, which they represented; each, however, was enveloped in a distinct fibrous sheath, which kept them so apart, that an incision exposing but one of them would not have brought the other into view, though the only space between them was that occupied by the intervening layer of fascia.

The branches furnished by these vessels were four in number; three from the external and one from the internal. Of the external three, the first about as large as a crow quill, came off close to the division, and went backwards to the muscles behind it; the second was smaller and entered the vastus internus; and the third which occupied the place of the anastomotica magna, took its origin just as the artery was joining its fellow. The branch from the internal vessel was small, and lost itself in the adductor muscles.

The popliteal, formed by the reunion of the two femoral arteries, was of the usual size; and either in its distribution or anatomical relations offered no one peculiarity.

The femoral vein, unlike the artery, was single. Placed superiorly along its inner side, it gradually in passing the middle of the thigh got to its back part, and applied itself in the ham to the outside of the popliteal artery, preserving throughout its entire course more relation to the internal than to the external arterial trunk.

The crural nerve presented nothing unusual. A few small twigs passed from it over the vessels in the upper third of the thigh, and lower down the saphenus branch attached itself to their sheath for some way, and thence proceeded towards the internal condyle of the femur.

Every circumstance connected with the irregularity in this case was such as must have inevitably caused a failure, had the occurrence of an aneurism in the ham unluckily made the operation necessary. The bifurcation of the femoral artery above the place at which it is usually tied, with the reunion of the branches in the lower part of the thigh; the concealment of the profunda, and the occupation of its place by the external division; together with the double sheath, was a combination incompatible with success. The surgeon would, most likely, have tied his ligature round the internal division of the artery, with, perhaps, only a passing observation on its smallness; whilst the external, either being unnoticed on account of its fibrous covering, or else mistaken for the profunda, and consequently left unobstructed, would

have carried the blood with sufficient force to make the tumor pulsate, and frustrate the design of the operation. The same result must have equally followed had the external division happened to become the object of the surgeon's selection.

The preparation showing this variety I have preserved, and placed in the Museum of the Royal College of Surgeons.

8, Chatham-street,
April 25, 1826.

Since the above case was sent to press, an account of one precisely similar in anatomical arrangement, but with the superaddition of disease, has been published by Mr. C. Bell, in Anderson's Quarterly Journal for October 1826; and its result adds value to mine, by having realized the difficulties which I suggested might occur, did such become the subject of operation.

The patient, a negro, was admitted into the Middlesex Hospital, for aneurism of the popliteal artery in the left leg, (the same as that in which the irregularity noticed in my case occurred). On pressing the artery in the groin the pulsation of the tumor was stopped, but it could not be stopped by pressure in the middle of the thigh. For these reasons Mr. Bell proposed to tie the artery lower in the thigh than usual. The ope-

ration was attended with no unusual circumstances. When the ligature was tied, the pulsation in the tumor ceased for a few seconds, but soon returned, and in a short time became nearly as distinct as before the operation, and quite different from that thrill or slight pulsation so frequently found after this operation. Mr. Bell conceiving that he had done all that ought to be done, determined to wait the result. On the third day the pulsation in the tumor stopped; a feverish state came on; inflammation of an erysipelatous character seized the wound, and along the course of the sartorius muscle;—the patient gradually sunk, and died on the 6th day. On dissection it was found, just below the part where the profunda was given off, that the femoral artery was divided into two nearly equal branches; these ran parallel to each other to the part where the artery passes through the tendon of the triceps muscle; here they reunited. The ligature was found on the more superficial artery, a little above this reunion.

The unfavourable termination in this case was produced by the inflammation and fever which followed the operation, and probably the cessation of the pulse in the tumor at the end of three days arose from the same cause; but had these circumstances not interfered, most probably the operation would have gone for nothing.

The analogy between the two cases is very striking, and the experience of the possibility of their

occurrence, together with the fact derived from Mr. Bell's case, that tying one of the vessels will not cure the disease, should, I think, induce an operator, if he met in an aneurism the symptoms described by Mr. Bell, to prefer tying the artery high up, where pressure on it commands the circulation, rather than near the tumor where it has not this effect.

A
C A S E
OF
UN-UNITED FRACTURE
OF THE
T I B I A,
TREATED SUCCESSFULLY BY THE SETON.

BY

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THE introduction of the seton as a mode of treatment in un-united fractures, is of so recent a date, that practitioners are not as yet fully authorized in giving this remedy their decided approbation; for although several cases are recorded in which its success was complete, yet in others this was but partial; and I have been informed that in some instances complete failure, and even death has ensued. But one opportunity has occurred to me of employing this agent, and as the patient was advanced in years, and the

circumstances under which he presented himself, in many respects unfavourable, I am induced to hope that his recovery may tend considerably to increase our confidence in this method of cure.

Matthew Fitzpatrick, a gardener, aged 60, of a naturally good constitution, slender make, and rather above the middle size, received a compound fracture of both bones of the right leg, on the 3d of August 1825, in consequence of the wheel of an empty dray having passed over the limb. The fractures were oblique, situated about the centres of the bones; and half an inch of the spiculated extremity of the upper portion of the broken tibia projected anteriorly through a small wound. He was immediately visited by a bone-setter, under whose care he remained five weeks; during this period considerable inflammation and abscesses in the neighbourhood of the fracture took place.

On the 7th of September he was received into the Meath Infirmary in the following state:—His general health was considerably impaired, his strength and appetite bad; his pulse 100, rather weak; tongue clean, and bowels regular; no appearance of union in the fracture. There were two pea sized fungous openings on the front of the leg, in a line with, and communicating with the fracture, one over each lateral edge of the tibia; there was a moderate discharge, and the foot was cedematous.

The limb was laid on the heel, the ordinary splints and tailed bandage were applied ; and he was ordered aloes and blue pill, in alterative doses, with the acidulated bark mixture, and a generous diet.

On the 18th his health had improved, his pulse was 80, and the fracture appeared to be uniting.

On the 24th the external ulcer had healed.

November 5th. The fracture of the fibula had united firmly, but between the ends of the broken tibia there was a soft union, allowing of motion. His health was good. The case being considered favourable for the seton, the operation was performed in the following manner :

A common silver probe was first introduced into the opening on the inside of the tibia, and passed through the course of the fracture ; its end being then felt at the outer side of the tibia under the integuments, it was cut upon, and brought out ; a curved steel probe, armed with a waxed thread seton, was then introduced, and the silver probe withdrawn. The seton passed through at about one-third of the depth of the bone, it being found impracticable to pass it deeper. The diet and remedies before mentioned were continued.

November 7th. There had been slight un-

easiness in the parts; erysipelatous inflammation for two inches all around the wound; slight discharge; pulse 100, moderate. Seton was moved slightly.

12th. Pulse 92; inflammation less; an abscess had formed on the surface of the bone, between the openings, giving exit to the seton, and had partly discharged itself by a spontaneous aperture in the centre.

16th. Pulse 80; considerable excoriation of the surface, but the discharge was moderate.

December 17th. Had for a week experienced much irritation, pain, and interruption of rest; the openings were spongy, and covered with large soft granulations. The seton (which had been moved thrice weekly from the period of the operation,) was no longer in the channel of the tibia, but confined merely by a portion of the integuments. Bone no longer denuded, and a depression which had existed on its anterior surface since the injury, appeared two-thirds diminished. Felt the limb much stronger. The seton was removed by dividing the skin confining it.

24th. Fungation lessened; excoriation and pain gone; bark mixture omitted.

January 14th, 1826. Wound all healed but a pea sized ulcer towards the inside of the tibia.

19th. Wound healed ; fracture firmly united ; a slight rise on the bone in its site ; cicatrix measured two inches ; was unable to bear on the limb. Lin. Ammoniae ; Omitt. cætera.

February 8th. Has been able to stand on the limb for some days, but walks imperfectly ; his general health, however, being good, he was discharged cured.

The only case, analagous to the foregoing, which I have been able to find, is detailed by Mr. Boggie in the 7th volume of the Medico-Chirurgical Transactions. In both cases the fractures were compound, and in each, one of the orifices of the canal through which the seton passed, was formed by a fistulous opening, which had followed the original injury. It would appear to be desirable to pass the seton in this manner in all cases which admit of it, as thereby considerable pain may be prevented, and the occurrence of inflammation, in some measure, obviated.

The rapidity with which the deposition of bone occurred in this old man was surprising, and it was extremely interesting to see the seton gradually pushed forwards by the efforts of nature, in proportion as the cavity in the bone, through which it ran, became filled up ; till, at length, it was completely thrust out, there being no longer a cavity to receive it, and it remained confined

merely by the integuments. I think it more than probable that union had occurred at this time, although I did not deem it prudent to make the trial until after the wound had perfectly cicatrized.

Navan, February, 1826.

DESCRIPTION
OF A
HUMAN STOMACH
OF A
SINGULAR FORM AND STUCTURE,

BY
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DEMONSTRATOR OF ANATOMY AT THE PARK-STREET
SCHOOL OF ANATOMY, &c.

IN the course of the last winter I had an opportunity of examining a human stomach of so singular a form, that it is scarcely necessary to apologize for troubling the profession with an account of it. The body in which it occurred was that of a female, aged about 30, which had been brought into the Park-street dissecting-room ; nothing of whose previous history could be learned.

An intelligent pupil, to whom the body had been allotted for dissection, first called my attention to it by remarking that the abdominal viscera

appeared to be somewhat displaced. On making examination I found that the stomach deviated from its usual transverse direction, approaching more to the perpendicular; and that the first portion of the duodenum appeared unusually long, running transversely to the right without ascending, as generally described, in its course from the pylorus to the neck of the gall-bladder.

As the irregular position of these organs might have been a consequence of disease, I examined with particular care the state of the surrounding viscera, more especially the condition of the peritoneum, but no morbid appearance whatever, not even the existence of a single adhesion of the last named organ, could be discovered.

The stomach and duodenum were then removed and inflated, when the peculiar shape of the former viscus, and its remarkable connexion with the latter, became fully apparent. The left extremity of the stomach had its usual appearance as to form and size; but the right extremity, instead of contracting until it became continuous with the duodenum after the ordinary way, ended in a cul-de-sac, about half as large, to appearance, as the great end of the left extremity. The duodenum proceeded from a depression which marked the lesser arch of the stomach, about mid-way between its cardiac orifice and the most remote part of its right extremity.

When I injected air, and afterwards water, into the stomach, by the cardiac orifice, I found that these fluids were longer than usual in finding their way into the duodenum; not entering this latter viscus until after the stomach had become fully distended; a circumstance which was not owing to any preternatural contraction of the pylorus, but depended altogether on the acuteness of the angle at which the duodenum went off from the stomach.

The stomach exhibited a very remarkable appearance in the vicinity of the pyloric orifice, in consequence of a patch of tendinous substance on the anterior, and another on the posterior surface of that organ, each of which was of a form nearly circular, and about twice the diameter of a crown piece. (*See plate.*)

The circular fibres of the muscular coat were arranged thus at the right extremity of the stomach; they ran converging from the circumference of the cul-de-sac to insert themselves into the margin of the tendinous patches above described. The longitudinal fibres of the duodenum arose from the opposite edges of these tendons, which thus served as pyloric ligaments.

On examining the pylorus, by inverting the duodenum, I found that it consisted of a slit-like opening, having a transverse direction with respect to the line of the lesser arch of the stomach; and

that it was formed between two semi-circular folds of the mucous membrane, including muscular fibres, resembling very much the ileo-colic valve. These muscular fibres, which entered into the structure of the valve, were the commencement of the circular fibres of the duodenum. The biliary and pancreatic ducts opened into the lower part of the descending portion of the duodenum in the usual way.

The peculiar form of the stomach here described, the presence of the patches of tendon on its surfaces, and the converging arrangement of the muscular fibres at the right extremity, gave it an appearance strongly resembling that form of stomach which exists in several tribes of predaceous birds. In fact, it had quite the appearance of a stomach which an anatomist would feel disposed to say had belonged to a carnivorous animal.

It might, perhaps, have been interesting to ascertain whether there had existed any peculiarity in the digestive function of the individual to whom this stomach belonged; but there was no information on this point which could be obtained, as I could not succeed in learning any thing of her history during her lifetime.

OBSERVATIONS
ON AN
AFFECTION
OF THE
·MOUTH IN CHILDREN.

BY
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FOR THE DISEASES OF CHILDREN, AND ONE OF
THE PHYSICIANS TO THE WELLESLEY
FEVER HOSPITAL.**

AS one of the physicians to the Institution for the Diseases of Children, I have had frequent opportunities of observing an affection of the mouth to which children are liable, and which I find has been but cursorily noticed by authors. The affection to which I allude is a peculiar kind of ulceration of the gums and cheek; to which, under one of its varieties, some writers have applied the name of *Cancrum Oris*.

In most instances the ulceration, commencing in the gums, extends by continuity of surface to the lips and cheek, but sometimes it commences in the lining membrane of the lips or cheek, and extends from thence to the gums. This disease

is most liable to attack during the period of the first dentition. It is, however, frequently met with in children between three and seven years of age.

When the disease occurs in infants on the breast, it is generally attended with a purplish and spongy appearance of the gums and roof of the mouth, and the ulceration, which lays bare the necks of the teeth, both externally and internally, is of a greenish or ash colour, and very much disposed to bleed. The salivary discharge is increased; the tongue is white; the mouth feels hot; the bowels are for the most part confined, and the child in general labours under a greater or less degree of fever. I have not seen this form of the disease previously to the irruption of the four superior incisors, but I have frequently seen it when the child had only six or eight teeth; and I have constantly observed that when it occurs thus early, it is always the upper gum that is first and principally attacked. This I consider to be the mildest and most manageable form of the disease. As the bowels are for the most part confined, the necessity of a purgative is clearly indicated, and I have generally found that after free alvine evacuation the fever subsides, the mouth becomes cool, the gums lose their red and spongy appearance, and the ulceration speedily heals. In such cases as the above I have seldom found it necessary to make use of any local application. Where, however, the ulcers seem indo-

lent, and little inclined to heal after the repeated administration of purgatives, a little honey of borax, or a mixture of muriatic acid in honey, in the proportion of a drachm to the ounce, may be advantageously applied by means of a feather or camel's hair brush to the ulcerated surface. This disease is very apt to return when the state of the bowels is not particularly attended to. As the biliary secretion seems frequently to be defective either in quantity or quality, I consider small doses of mercurials, followed by occasional aperients, to be amongst the most likely means of confirming the recovery and preventing a relapse.

The most formidable variety of the disease is that which occurs in children between twenty months and seven years of age. The subjects of this form of the disease are generally of a pale, sallow, or bloated, unhealthy appearance. They have, most of them, laboured under more or less irregularity of the bowels; and as they are almost exclusively the children of the poor, it may be naturally supposed that deficient or improper food, scanty clothing, and impure air, may have materially contributed to its production. In every instance of this affection that I have met with, the constitution had been much debilitated by the existence of previous and long subsisting disease. In two cases that fell under my observation, the disease occurred as a sequela of measles; in another in the advanced stage of dysentery; in a

fourth upon the termination of infantile remittent fever: but it is more generally observed at the close of the exanthemata, than at that of any of the other acute affections to which children are liable. Dr. Marshall Hall, who has inserted a paper upon the disease in question in the 15th volume of the Edinburgh Medical and Surgical Journal, states, that in all the cases which have come to his knowledge, this affection had been preceded by fever, acute disorder of the digestive organs, typhus, inflammation of the lungs, variola, rubeola, or scarlatina. This affection would therefore appear, says Dr. Hall, to be in some measure the consequence of the exhaustion, debility, or irritation, produced by previous disease. Huxham witnessed a similar affection as a consequence of measles. In his Report for July 1745, he observes, "I have more than once during this month witnessed a mortification of the mouth and fauces, and besides a caries of the cheek and os vomeris, which occasioned a very painful kind of death, and that too after the measles." Dr. Willan remarks, in relation to scarlatina, "In one infant about the eleventh month, a considerable erysipelatous swelling affected the left cheek, and within three days produced a deep gangrenous eschar."

In this variety of the disease the ulceration is generally confined to one side of the mouth. Sometimes one, but more frequently both gums are attacked, and the ulceration, which is ex-

tremely foul and attended with fetor, spreads rapidly to the lips and cheek, and seems to destroy partly by gangrene, and partly by absorption. Should the disease continue its progress, the teeth fall out in consequence of the destruction of the gums and alveolar processes, and in some cases the jaw bone itself is destroyed, so that should the patient survive, no teeth are afterwards formed in that side of the mouth. The tongue, from its contiguity to the gums, takes on a similar diseased action, and is either wholly or partially destroyed, while the cheek and lips, being sometimes eaten away, the bare jaw bone and inside of the mouth are exposed to view, exhibiting the most loathsome and horrible appearance that can be conceived. As the disease advances the salivation and fetor increase, but generally before the destruction of parts has been carried to the extent I have described, the patient is carried off by a species of low fever and diarrhoea, analagous to that which supervenes on gangrene of any other part of the body.

This is the disease in its most violent degree. It is, however, frequently to be met with in a milder form, when the ulceration is rather of a chronic than an acute nature, and but seldom attended with sloughing. In such cases, though the ulceration is most obstinate, and will frequently continue for months, the general health is apparently but little affected. It frequently, however, happens that there is evidence of defective biliary

secretion, both from the torpor of the bowels, and the unnatural appearance of the discharges.

As I have already said, the ulceration sometimes commences in the cheek, and extends from thence to the gums. In such cases the internal ulceration is occasionally attended with a peculiar hard and shining tumor of the cheek, which is frequently the forerunner of gangrene. This peculiar affection of the cheek is particularly described by Mr. Burns, and by Mr. Pearson in his *Principles of Surgery*. Mr. Dease, the elder, describes a similar disease under the title of the "Gangrenous Erosion of the Cheek," but with this difference, that the disease I speak of is attended by swelling and inflammation, whereas that described by Mr. Dease, and which answers to the disease described as Noma by Mr. Burns, is unattended by either. In the cases of this affection, described by Dr. Hall, the sphacelus commenced on the outside of the face, and after having destroyed the skin and subjacent tissue, penetrated at last into the mouth; but in the instances that have fallen under my observation, the sphacelus commenced always in the interior of the mouth, in the mucous membrane, and became propagated from thence to the skin.

As I had an opportunity of observing the progress of this affection in a case which presented itself some time since at the Institution, I shall give rather a minute detail of the symptoms, from

which a more perfect knowledge of the disease may be acquired than from any general description. In giving the daily report of the symptoms, I shall not enumerate the remedies I employed, as I shall have occasion to allude to these when I come to speak of the treatment.

The subject of this case was Mary Anne Motley, æt. 22 months. She had been ailing for a considerable time with hooping cough, to which measles succeeded, attended with inflammation and swelling of the lips. When labouring under diarrhoea, subsequent to the measles, she became affected with a hard, red, shining, and painful swelling of the right cheek; and on examining the inside of the cheek, a foul, deep, and irregular ulcer was observed on a line with the superior molars. The breath was excessively fetid, and there was considerable fever.

This report was made on the 22d of February, 1824. On the following day, February 23d, the swelling of the cheek was less, and the ulceration had not extended, but was covered with a black slough.

Feb. 24th. More swelling and inflammation; ulceration extended; restlessness; thirst; diarrhoea.

Feb. 25th. Cheek more swelled, hard, shining

and livid; ulceration extended; diarrhoea distressing.

Feb. 26th. Ulceration greatly extended; dark slough on the outside of the cheek, about the size of a six-pence, with the cuticle raised, and a sanious fluid intervening between it and the cutis; surrounding swelling of a dark livid hue; skin hot; pulse rapid; excessive thirst.

Feb. 27th. Slough on cheek as large as a dollar; surrounding swelling and inflammation have somewhat subsided; internal ulceration has extended nearly as far as the angle of the mouth; sanious discharge from external sore; no discharge from mouth; drowsiness.

March 1st. External slough considerably enlarged, reaching nearly to the angle of the mouth, of a dark black colour, and hollowed in the centre by a portion of it having fallen out; redness and swelling surrounding the slough have disappeared. From the state of the parts an examination could not be made of the inside of the mouth. Inability to protrude the tongue, upon which, however, the disease did not appear to have fastened. Increasing emaciation and debility; excessive fetor, tainting in a very perceptible degree the atmosphere of the apartment in which she lay. For some days frequent loose sounding cough, with inability to expectorate. She died on the evening of this day.

Next morning the body was examined by Mr. Tarleton. All the viscera of the thorax and abdomen were perfectly healthy, with the exception of the spleen, whose convex surface was covered with a deposition of granular lymph.

This was evidently a case of sloughing phagedena of the very worst kind, supervening in a habit much debilitated by previous disease. From the commencement of the child's illness, long before the swelling of the cheek, the lips were considerably swollen and inflamed, and it was not till the cheek became affected that the inflammation of the former gave way. An inability in the powers of the constitution to effect a resolution of the inflammation, or bring about a healthy suppuration in the cheek, I am inclined to consider as the cause of the disease terminating in gangrene. The rapidity with which this most formidable affection runs its course is placed in a striking point of view by this case, as the child was dead in less than ten days from the first appearance of swelling in the cheek. It is probable that the internal ulceration existed for some days before the disease manifested itself externally. I have observed that where there is ulceration of the lining membrane of the cheek, though it possess rather a chronic than an acute character, there is generally more or less of swelling of the cheek, but in this case there is rather a puffy, uncoloured, and diffuse swelling, than that hard, red, shining, and circumscribed swelling.

which, when it exists, always indicates a malignant ulceration within, which if not speedily counteracted, will be most likely to pass into gangrene.

In the case which I have just detailed the disease was confined chiefly to the cheek. The following furnishes an example in which the sloughy ulceration was seated principally in the lips.

Thomas Murphy, æt. 2 years, 7, Moss-street. When this boy was brought to the institution Feb. 2d, 1825, he was affected with a deep, foul ulceration of the lining membrane of the upper and under lip, extending as far as the gums, and loosening the teeth. The upper lip was swelled, inflamed, and hard. There was considerable salivation; the breath was extremely fetid. He was in a state of extreme emaciation, feverish, extremely cross and fretful, and laboured under diarrhoea with tenesmus, which had been present for several months previous to the commencement of the ulceration. The ulceration began in the lips, extended from thence to the gums, and had been observed about a fortnight before his admission. He lived in a damp and miserable cellar. Upon the 3d February, the ulceration had extended to the outside of the upper lip, was more foul, and attended with excessive fetor. The disease continued to spread, notwithstanding the application of the pure muriatic acid to the

sore, and the internal administration of carbonate of ammonia, sulphate of quinine, Dover's powder, wine, arrow root, &c. The upper lip was completely destroyed; the nostrils were partially eaten away, and at the time the child died, about ten days from his admission to the Institution, the sloughy ulceration was extending rapidly on the inside of either cheek towards the fauces.

From what has been said, it would appear that this affection of the mouth presents itself under three varieties.

First, as it attacks the gums in infants on the breast, and under twenty months. This form of the disease seems to consist in an acute ulceration of the gums; and though there be evidence of inflammation of the mucous membrane of the mouth, as indicated by redness, heat, swelling, and more or less of general fever, the ulceration is rarely, if ever, attended by sloughing. This, as I have already mentioned, is the most manageable form of the disease, and seems only to require the exhibition of purgatives for its removal. It seems to bear a close analogy to the acute aphthæ of infants, a disease which is generally cured by a similar mode of treatment.

The second variety occurs in children between twenty months and seven years of age. The ulceration commences generally in the gums, whence it extends to the lips or cheek. Sometimes it is of an acute, sometimes of a chronic na-

ture, and as it approaches to the one state or the other, it is more or less attended by sloughing. In the very worst cases, however, though the sloughing is considerable, the ulceration is always predominant, and by its means the destruction of parts is principally effected. This form of the disease, which seems to answer to the affection described as *Cancrum Oris* by authors, bears a resemblance in some respects to the ulceration and inflammation of the mouth produced by mercury. In some instances the disease has commenced at the time the child was using this mineral. I have one case distinctly in my recollection in which I was induced to administer calomel largely in consequence of a hydrocephalic affection. In the course of a few days a foul ulcer appeared on the inside of the cheek, which extended rapidly, and soon involved the cheek and contiguous parts in gangrene. Death seemed to be occasioned by the gangrenous affection of the mouth, not by the disease in the head; though upon opening the body I found the ventricles of the brain distended with serum. The only other morbid appearance that I observed was a considerable patch of sloughy ulceration in the mucous membrane of the sigmoid flexure of the colon, similar to that which existed in the lining membrane of the mouth.

At the time this case occurred I was disposed to attribute the affection of the mouth to the calomel, but I have seen so many cases since of a precisely similar kind, where there was no reason to

suppose that mercury, at least to any extent, had been administered, that I am strongly disposed to doubt whether there be any necessary connection between the appearance of this disease and the previous administration of mercury. Indeed so little am I inclined to believe that this affection of the mouth is owing to the exhibition of mercury, that I frequently have recourse to mercury both as an alterative and a purgative for its removal; at the same time I am aware that the mercurial sore mouth is in some instances attended with sloughing phagadema; but this disease, though somewhat similar in appearance, I consider as essentially distinct from the one I am now describing. It might be proposed, says Dr. Hall, in the paper already alluded to, as a question, whether this affection may be an effect of calomel, so usually prescribed in the present day, in almost all the diseases of children. To this question the Doctor is disposed to reply in the negative; for in one of the instances which he details, it appeared to be distinctly ascertained that no calomel had been administered; and the effects of calomel on the mouth, even when so great as to induce sloughing and prove fatal, are manifestly different, he continues to remark, from those of the disease under consideration.

In the mercurial sore mouth we generally find that the gums of both jaws, as well as on both sides, are equally affected with inflammation and ulceration; whereas in the affection above de-

scribed, the ulceration, if not confined to the gum of one jaw, is for the most part confined to the gums on one side. The fetor of the breath produced by mercury possesses also a peculiar quality, which will in most cases sufficiently distinguish it from the highly offensive and putrid odour which accompanies the disease under consideration.

The third variety of the disease is that which is confined principally to the cheek or lips in the first instance. It commences by ulceration of the lining membrane of the cheek or lips, which is soon followed by that hard, red, shining and circumscribed swelling, which, if the morbid action be not arrested, will speedily pass into gangrene. In this variety of the disease, though there is more or less of ulceration, the gangrene is predominant; and it is to the constitutional disturbance, occasioned by the latter, that death, when it occurs, is to be attributed. This form of the disease seems to resemble, in many respects, that gangrenous inflammation of the pudendum in children, of which so excellent a description has been given by Mr. Kinder Wood in the 7th vol. of the Medico-Chirurgical Transactions.

Of the treatment of the first variety of this affection I have already spoken, and it only now remains that I should make a few observations upon the remedies to be employed in the second and third varieties.

In the second variety of the disease, though sloughing is sometimes present, the ulceration is predominant; and this, as I have already mentioned, is either acute or chronic. Where symptoms of acute ulceration exist, I have generally observed that they are combined either with a torpor of the bowels, or some depraved state of the biliary secretion, as indicated by the green, or clayey appearance of the stools. In such cases, therefore, after having cleared out the alimentary canal by a brisk cathartic, I am inclined to rest most of the constitutional treatment upon an alternation of mild mercurials with aperients. The local applications that I have found most useful in this form of the disease are the black wash, and a dilute solution of muriatic acid in honey, in the proportion of a drachm to the ounce. Where the ulceration is rather of a chronic than an acute nature, a similar constitutional treatment will be required, and though the disease may be tedious, I believe an assiduous application of the means, both local and general, already mentioned, will generally effect a cure. As soon as the general health is established, the ulceration will assume a healthy appearance, and heal. When the ulcerated surface is in contact with a carious tooth, or even with one that is thickly incrustated with tartar, the tooth should be removed, for the irritation thus occasioned seems to contribute to the keeping up of the disease. When the teeth are loose, which they generally are when the gums are affected, they should be removed. I have used the *solutio arsenicalis* and

the cold salt water bath, on the principle of general tonics, but without any apparent advantage. The alterative treatment I have above mentioned is that on which I place the most reliance.

In the third variety of the disease, or that in which the gangrene is predominant, let us do what we may, I believe a fatal termination will generally be the consequence. When symptoms of mortification set in they leave us but little ground for hope that the powers of the system, even though aided by medicine, will be adequate to shake off the local disorder. I have employed a variety of local applications, such as the mineral acids, dilute and pure, the oxymel æruginis, the butter of antimony, solution of the nitrate of silver, the black wash, &c. yet, in most instances, without any obvious good effect. With these local means I have combined a general tonic treatment, the internal administration of cinchona, carbonate of ammonia, opium, and wine, yet all to no purpose; the disease has pursued its ravages unrestrained, and terminated sooner or later the miserable existence of the patient.

Mr. Dease states, that by the internal exhibition of muriatic acid, by using it externally as a lotion, by prescribing a nourishing diet, broth, jelly, wine, &c. and by occasionally administering an emetic, with a view to evacuate the stomach of any putrid ichor that might be contained it, he had often succeeded in curing the disease; and I am aware

that cases of recovery have occurred in the practice of others, but less frequently, I strongly suspect, than is generally imagined. Of six cases that came to the knowledge of Dr. Hall, one terminated fatally at an early period, apparently from extreme irritation. In four others life was prolonged until a considerable portion of the soft parts of the face and mouth was destroyed by the mortification. In a sixth the patient survived the affection altogether, after experiencing an extensive sphacelation of each cheek, of a part of the tongue, of the contiguous gums, and even of a portion of the jaw bone. When recovery does take place, after the destructive process has been carried to the extent described in the foregoing cases, the loss of substance can never be repaired, and the patient is an object of deformity for life.

In a few instances, in which the disease had made considerable progress, I have known recovery to take place under the administration of the sulphate of quinine and carbonate of ammonia, but in none of these cases had the ulceration extended so far as to involve the outside of the lips or cheek.

The following may be adduced as an instance in which the disease was arrested by the tonic plan of treatment alluded to.

William Archer, æt. 6 years, applied at the Institution October 27, 1825, affected with a large,

foul, sloughing ulcer on the inside of the right cheek, attended with external swelling and hardness, a slight degree of tension, and some redness. Posterior part of corresponding side of tongue covered with a foul slough; gums and remainder of mouth free from disease. He had been ailing for three weeks, with symptoms of infantile remittent fever, attended with much emaciation, for which he had taken a few doses of calomel. The affection of the mouth was not observed until the 22d, instant, since which period the symptoms were reported to have been on the increase. He was directed to take two grains of sulphate of quinine, with one of Dover's powder, thrice a day; but the bowels being confined, they were opened, as a preparatory measure, by a combination of calomel with jalap. On the 30th a considerable portion of slough separated from the inside of the cheek, but on the following day the gangrenous ulceration had extended nearly to the angle of the mouth. Four grains of carbonate of ammonia (a remedy which was first suggested to me by Mr. Wallace of this city)* were now administered every third hour, and continued till the 8d of Nov., at which period the slough had entirely come away, leaving

* Mr. Wallace informs me that in many of the worst cases of this affection he has succeeded in effecting a cure by the internal exhibition of carbonate of ammonia, in conjunction with the application of pure nitric acid to the sore. He generally commences with five grains of the carbonate, which he increases to ten grains, or even a scruple, and administers at shorter or more distant intervals, according to circumstances.

a red, healthy, and granulating surface behind. The swelling of the cheek had subsided, the fetor had disappeared, and in a few days the sore in the mouth was perfectly healed. Throughout the progress of the disease a nutritious diet, consisting of mutton broth, arrow root, &c. was enjoined, and the child had, besides, a moderate allowance of wine.

The result of this case, and that of some others which have fallen under my observation, clearly evince the propriety of the cordial and tonic plan of treatment in this variety of the disease; but again I must say, that where the sloughy ulceration has extended so far as to involve the whole substance of the lips or cheek, let us do what we may, the issue will generally be unfavourable.

As there seems reason to believe that a confined and vitiated atmosphere may concur with other circumstances in the production of this disease, it is obvious that a removal to a pure and healthy air, above all, the air of the country, should be strongly insisted on in its treatment. Though in two or three instances I have seen this affection in more than one individual of the same family, I have not met with a sufficient number of facts to justify me in considering it as contagious.

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C A S E

OF

RUPTURED COECUM,

WHICH

**TERMINATED IN DEATH FORTY-EIGHT HOURS
AFTER THE ACCIDENT.**

BY

JOHN SPEER,

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APRIL the 8th, 1824. I was called on at seven o'clock this morning to visit James Burn, aged 35, strong and muscular. I found him labouring under the following symptoms: violent pain in the abdomen on pressure, chiefly below the umbilicus; constant vomiting of a yellowish fluid; cold extremities; without pulse at the wrist; retention of urine; countenance contracted. His bowels had not been opened for forty-eight hours.

The account I got of this man's complaint from himself and his wife was as follows:—He left

home the day before with a funeral, which he accompanied for five miles, and on his return in the evening he commenced wrestling with a neighbour, and after a severe struggle succeeded in throwing him to the ground; his antagonist fell on his back, with his knees bent upwards, and Burn fell nearly at the same moment with his abdomen on his antagonist's knees, receiving a violent contusion chiefly in the region of the umbilicus. According to his own account he felt as if something had given way internally; he fainted immediately, but soon recovered, complaining of severe pain in his abdomen, with vomiting. In this state he was conveyed home in an open cart, a distance of five miles, during which the vomiting and pain continued; but in consequence of his having been intoxicated, no medical aid was obtained until the next morning, although the pain and vomiting were very distressing during the night.

On my first visiting him every symptom indicated his approaching dissolution, and, although I was of opinion that mortification had taken place from injury of some of the abdominal viscera, yet, being aware of the deceitful state of the pulse which attends all abdominal inflammations, I attempted in the first instance to take away some blood from his arm; but before three ounces could be extracted, he fainted, with cold sweats about his head and neck; he afterwards was placed in a bath of the temperature of 96, which

gave him some relief; he appeared refreshed, and could turn in his bed with greater ease; the superior part of his abdomen, along the margin of the ribs and across the region of his stomach, could bear pressure without pain; he did not complain of his chest; his respiration was natural, and intellects clear; he talked rationally, and gave a very accurate description of the accident, but the distress and vomiting continued; the pain and tenderness about the umbilicus was unabated, and the pulse imperceptible, even at the elbow. He now complained of a great desire to make water, with inability to void it, and pain in the region of the bladder; the catheter was introduced, and a pint of urine drawn off; a large blister was applied to his abdomen, injections were administered, and calomel given, but immediately rejected.

The above symptoms continued until the evening of the 8th, after which he complained of no pain, except when his abdomen was pressed on; his extremities at the same time grew cold, and his countenance became gradually more contracted; his senses were clear to the last, and he was free from hiccup; he expressed himself relieved, and entertained to the last hopes of a recovery.—He died on the evening of the 9th at six o'clock, forty-eight hours after he met with the accident.

Leave having been obtained to examine the body, the dissection was made in the presence of Mr.

Adams, when the following appearances presented themselves :—the abdomen being opened, a quantity of the contents of the intestines was found in the cavity, and when pressure was made over the large intestines with the hand, their contents were forced through an aperture in the intestines ; and on further examination, the coecum was found ruptured. The aperture was about two inches in circumference, with uneven ragged edges, and evidently the consequence of the fall he had received ; it was surrounded with marks of extensive inflammation, as were all the small intestines, on whose surface several layers of coagulable lymph had been deposited in different places, forming a false membrane of a soft texture.

The correspondence of the symptoms which this case presented with those which, in the latter stages of Enteritis, follow the perforations of the intestines, and the escape of their contents into the cavity of the abdomen, is well worthy of observation.

C A S E S
OF
DISEASES OF THE HEART,
ACCOMPANIED WITH
PATHOLOGICAL OBSERVATIONS.

BY
ROBERT ADAMS, A. B.

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ONE OF THE SURGEONS TO JERVIS-STREET INFIRMARY, &c.

IN the following pages it is not my intention to enter into any detailed account of the different diseases of the heart which I shall have occasion to allude to, but to report briefly some remarkable examples of derangement of that organ which have occurred to me in practice. I mean to accompany them with such observations only as have naturally arisen in my mind during a painful attendance on these melancholy cases.

I shall first consider some morbid affections of the membranous coverings of the heart ; secondly,

those changes which I have observed its muscular structure to undergo ; and lastly, I intend to describe and exemplify, by cases, those organic alterations of the auricular and arterial openings of the ventricles which I have remarked more than all the others to derange the function of the circulation.

I.—OF MORBID AFFECTIONS OF THE MEMBRANOUS COVERINGS OF THE HEART.

The pericardium, according to the modern arrangement of membranes, belongs to the fibrous class, and consists of two layers, differing from each other widely in their structure and uses, and very differently affected by disease. The internal serous layer is a transparent membrane, forming a shut sac, immediately investing the heart itself, and reflected from it and its vessels to line the whole concavity of the external fibrous portion ; it serves to isolate the heart, and to contain a fluid which facilitates its motions ; the external fibrous layer thus lined is partially covered by the pleura, is attached below to the diaphragm, and lost above by surrounding the large arteries arising from the heart. To the assigned use of this fibrous layer to form limits to a cavity in which the heart is to move, it may be added, that interposed between two more delicately organized membranes, it may perhaps occasionally though not always, serve as a barrier interrupting the ex-

tension of inflammation of one serous membrane to the other, and thus prevent a fatal combination of pericarditis and pleuritis. Examples, however, of such a combination are by no means uncommon; in these cases it is not always easy to determine in which of the serous sacs the inflammation originated, but it is reasonable to suppose, independently of what the symptoms might lead us to suspect, that the pleura, as being the more exposed membrane, and presenting the more extended surface, is generally the first attacked, and that the pericardium becomes secondarily affected. Inflammation sometimes in its extension disregards all difference of structure, and passes from the surface to the heart. This is, I believe, by no means common; but I have lately known a well marked example of it, in the case of a man who received an external injury of the chest: to the ordinary consequences of the primary injury succeeded the acute symptoms of pericarditis, which terminated in death. On dissection were exhibited the effects of inflammation of the different textures from the skin to the serous membrane of the heart, which was extensively coated with lymph; the pleura and neighbouring portion of the left lung had been also implicated, the inflammation having passed the barrier, which in ordinary circumstances the fibrous portion of the pericardium would seem to set to it.

OF MORBID AFFECTIONS OF THE FIBROUS MEMBRANE.

Like the dura mater, the fibrous membrane of the heart, to which it is analagous in structure and function, is liable to ossification, although this change is very uncommon. Senac, Burns, Baillie, each have seen an instance of this alteration of structure; but Laennec, in his *Essay on the Heart*, gives the only minute and full account of a case of ossification of the fibrous layer of the pericardium I have met with in authors; I may briefly mention that his patient had the common symptoms of diseased heart, and that he died dropsical. On dissection the heart was found enlarged, and at first sight seemed as it were enclosed in a bony case; around the base of the ventricles there was a band about two inches broad, partly cartilaginous, partly bony, unequally thick, flattened, and a little rough on its surface, which sent from its interior a process, separating the ventricles from the auricles, and along each side of the septum of the ventricles, it produced a triangular prolongation, almost entirely cartilaginous, about two inches broad above, which terminated in an angle at a short distance from the apex of the heart; this plate of bone was evidently developed between the fibrous and serous layer of the pericardium; the auricles were larger than the ventricles; the right cavities were full of very fluid blood, of a deep

reddish brown colour; the left cavities appeared in the same state, although they were empty when examined, the blood having most probably flowed out when the lungs were separated from the heart.

I shall now relate the only case of ossification of the pericardium I have met with on dissection. Two men, apparently of the same age, about 60, who had been shut up under deck in a vessel lying in one of the docks, and exposed for some time to the fumes of charcoal, were brought into Sir P. Dun's Hospital, both in a similar state of exhaustion: their bodies were warm, but respiration had ceased for a few moments in both; the usual means were resorted to, and both in a little time revived; one completely, but the other, after exhibiting signs of life for two hours, expired. On examination of his body, which was muscular and athletic, the viscera were found all in a natural state, except the heart; this organ was a little enlarged, and was very generally adherent to the pericardium; it was encircled, or nearly so, by a zone of bone, about three lines in thickness, and more than an inch in breadth. That this bone was deposited in the pericardium itself was very evident, although in some points it had sunk into the muscular tissue, and penetrated almost to the lining of the ventricle. In consequence of the adhesion of the pericardium to the heart in some parts, it was not easy to decide where the bone was originally situated; but in others it was quite

evident that it had been deposited between the fibrous and serous layer, as it was lined by the latter in the same manner we occasionally find the internal membrane in the arteries covering those earthy depositions so very constantly found in the tunics of these vessels.

Upon examining the cavities of the heart, which in Laennec's case was filled with fluid blood, white coagula, of an unusually firm consistence, appearing at first sight to adhere to the ventricle, and being, as it were, organised, were found in the left and right sides of the organ. Mr. Wilmot, Professor of Anatomy and Surgery at the College of Surgeons, who gave me an opportunity of seeing this case, has preserved the specimen of these morbid appearances.

When from organic disease or mal-formation, the structure of the heart is at all deranged, so long as the body is in a state of rest, and that respiration goes on in a regular manner, the effects of the imperfection in structure are little felt by the system at large; but the moment that either the mind is agitated by any strong emotion, or that the lungs are disturbed by any rough exercise, the action of the heart becomes laborious and irregular, or its pulsations intermitting, the person falls into syncope. Such an accidental circumstance may be highly dangerous, for the imperfect organ once interrupted, may not be capable of resuming its

functions, a circumstance we should bear in mind in our treatment of such cases.

If the three important organs, the heart, the brain, and the lungs,—the “tripod of life,” as they have been aptly denominated, be not all equally strong at a time when animation has been accidentally suspended, the weak one cannot be roused to resume its functions. Thus under such circumstances what might have been supposed a simple faint, has terminated in death; and I think in the case I have just given of ossification of the pericardium, in such an altered structure, was to be found the cause of death, as a man placed exactly in similar circumstances, but whose organs were sound, survived. It may be worth noticing that the coagula found in the heart in this instance, composed of the fibrin of the blood, evidently bore the appearance of not having been recently formed; we were quite familiar with the appearance of coagula in the heart, but were struck with the consistence of these, and at first sight imagined that they were adherent to the ventricle, and in a commencing state of organization, but subsequent examination undeceived us.

OF MORBID AFFECTIONS OF THE SEROUS MEMBRANE.

Perhaps there is no disease the anatomical character of which is better described than pericarditis;

its seat is evidently in that serous membrane which, after having lined the fibrous bag of the pericardium, is reflected over the great vessels and the heart, which it every where covers. The general signs by which the disease may be recognized are exceedingly equivocal, and much requires to be done by the physician to clear the obscurity. I have been frequently called upon to examine the bodies of persons supposed to have died of disease of the lungs or liver, and I have found pericarditis the true and single source of death, although during the previous illness the heart was never suspected to be the seat of a fatal affection. I have myself been witness to the treatment of a case of chronic inflammation of the pericardium in a girl aged 14, which terminated fatally, and during the whole progress of the disease phthisis, or rather what was considered hepatic phthisis, was the disease under which this child was supposed to be gradually declining. Her general appearance bore the character of scrophula; a few days previous to her death I took the following notes of her state, which I copy verbatim. " Sarah Langly is greatly emaciated and very weak, yet does not wish to remain in bed, but prefers to be dressed, and to sit most of the day crouched by the side of the fire; the countenance is pale, and bespeaks great distress in the chest, yet the lips are not livid, but of a good color; the eyes appear large and brilliant; the skin is harsh, dry and rough, and cannot be by any means made clean; there is a general disposition to a growth

of downy hair every where on the surface; the skin is never relaxed by perspiration; the bowels are regular, but occasionally affected by diarrhoea. The tongue is reddish, and but little different from the healthy state; the respiration is 54, the pulse 156 in the minute. There is much wheezing in her respiration during the night, and frequent cough, with but little expectoration. Upon exposing the chest and abdomen with a view to make a more particular examination, the former presented an unusually good formation; it was equally and uniformly convex, and the outlines of what we supposed a much enlarged liver could be traced through the parietes of the abdomen. The child lived about a week after these notes were taken."

DISSECTION.

The lungs were sound, but the pericardium was more enlarged than I had ever seen it, and contained, I am sure, about 20 ounces of purulent fluid, much resembling that which we are familiar with, as proceeding from scrophulous diseased joints. The organized membrane which invested the heart's surface, and which lined the reflected layer of the pericardium, was granulated, and presented much more the appearance of that membrane which lines a fistulous abscess than the yellow tenacious lymph, which we uniformly see in cases of true acute pericarditis. The lungs were sound generally, although a few

scattered tubercles confirmed the suspicion of a scrophulous constitution, which her general appearance indicated. The liver was perfectly sound, but a quantity of fluid, which the pericardium contained, getting through the diaphragm on the liver, had depressed that organ, and caused it to present itself in an unusual manner towards the anterior part of the abdomen, by which we were led into the error of imagining that the liver was enlarged; whereas the true seat of the disease was the pericardium, and the evident cause of death was to be found in a species of chronic strumous inflammation of that membrane.

ACUTE PERICARDITIS.

In January 1824, I was called upon to examine the body of a young lady aged 16 years, who died of an illness of only 14 days duration. My attention during this examination was particularly directed to the brain and lungs, which were supposed to have been the seat of the fatal illness. I found, however, the brain and abdominal viscera perfectly sound.

Upon raising up the sternum a large mass of yellow tenacious lymph covered the pericardium, and filled the cellular membrane which connects this bag to the back part of the sternum. Upon cutting into the pericardium a quantity of sero-purulent fluid flowed out, the whole of the

heart's surface was covered with a thick tenacious layer of organized lymph, rough, and reticulated on its surface. The concavity of the pericardium presented the same appearance, and several minute red specks denoted the organized state of the new membrane, which had been produced by very active inflammation, yet the exact seat of which had never once been suspected by two very eminent medical gentlemen who had seen this lady in her short illness. The lungs in this case were perfectly sound; the vessels of the bronchial membrane, particularly at the bifurcation of the trachea, were in a slight state of congestion.—It may not be uninteresting here to relate some of the particulars of this case. The young lady's health had been uninterrupted until about a week before her last illness; at a time when her catamenia were present, she imprudently plunged her feet and legs into cold water; a slight pulmonic attack, as it was supposed, immediately succeeded, from which apparently she recovered. Her spirits, however, which were not naturally high, were observed to droop, and she became averse from exercise. The catamenia did not recur at the usual period; but about this time she became affected with oppression of her breathing; frequent short cough; she was pale and languid, had a hot skin; a small, quick, and irregular pulse; total loss of appetite; and in short had many of the symptoms of ordinary fever, which compelled her at once to take to her bed. She had, however, neither headach

nor pain any where ; her tongue was not foul, nor was she thirsty.

She expressed no wish for any thing, but lay all day on her left side, or on her back, teased almost continually with a short dry cough, she had occasional paroxysms of dyspnoea, which were not very urgent, and had much the appearance of being the result of nervous debility. She had frequent weaknesses, which never amounted to complete syncope ; her mind was perfectly calm, and never wandered ; her intellect was perfect up to the few moments before she breathed her last.

It was remarkable that during her whole illness she scarcely got two hours sleep. With respect to the treatment, it consisted in two large bleedings from her arm, and in the frequent application of leeches and blisters to her chest, and purgatives. To procure rest anodynes in different forms had been exhibited.

Thus while the dissection in this case gave us an instructive, and at the same time an humiliating lesson, it also afforded a consolation to the medical attendants and friends of the lady by showing that every measure had been resorted to which a better knowledge of the actual seat of her fatal illness could have suggested.

All cases of acute pericarditis are not so obscure

nor so likely to be overlooked. I have seen many cases of metastasis of rheumatism to the heart which could not be mistaken. The sudden cessation of pain elsewhere, and the concentration of the distress and suffering about the heart, with the difficulty of breathing, and appearance of anguish in the countenance, are in many instances so striking as to fix the observation of the most inattentive, and to excite the physician to meet in a prompt and decisive manner such threatening symptoms ; his utmost efforts however will often prove unavailing in these cases.

**METASTASIS OF ACUTE RHEUMATIC INFLAMMATION
FROM THE SYNOVIAL MEMBRANES OF THE EX-
TREMITIES TO THE SEROUS MEMBRANE OF THE
HEART.**

Rose Fox, ætat. 6 years, in the month of March 1825, was afflicted with a very severe attack of acute rheumatism, which engaged successively the principal joints, and shewed itself also in most of the muscles. Active measures, consisting of venesection, purgatives, together with the use of mercurials and the warm bath, proved successful. The child's convalescence was not, however, rapid; it was not for two months that she was restored to perfect health. In the latter part of August she became again afflicted with pain and swelling, and redness of the ankle and knee joints ; the least motion was insupportable. There was great

heat of skin, more particularly of the affected articulations; and remarkable frequency and hardness of the pulse, a loaded tongue, anorexia, in short a combination of symptoms denoting high inflammatory action; although these were actively met by the appropriate remedies, they changed but little until the fourth day, about which time the inflammation leaving its original seat passed along the muscles forming the parietes of the abdomen and thorax, and in the latter region very particularly fixed itself on the left side over the heart. Presently, in addition to the hardness and frequency of the pulse, it presented a remarkable tremulous vibratory feel, and the little patient exhibited more general distress. The horizontal position could not be borne, the limbs could now be tossed about without the slightest pain, the heat, redness, and swelling had disappeared from the joints; there was however neither mitigation of pain, nor of tenderness on pressure of the abdominal muscles, nor relief from the deep distressing anxiety and pain of the heart, to which the little patient usually pointed when asked about her sufferings. The breathing was hurried and distressed; not simply as in ordinary fever, but there was a corresponding anxiety of countenance; and she continually maintained the sitting posture, the head inclined forwards, and required support of the hand of her attendant, such was the debility. She had at this period some cough, and expectorated with difficulty a viscid mucus. She

died on the 18th day of her illness, having preserved her mental faculties in a perfect state throughout. The same remedies were tried in this latter illness which had been found useful to the patient on a former occasion, when labouring under similar symptoms. In short every measure which a firm conviction that the heart was now implicated could suggest was resorted to. In addition to mercurials, combined with Dover's powder and antimonials, and active venesection, blisters were applied to near, and also to distant parts. The warm bath was had recourse to, the colicium was fully tried; and every effort made to produce salivation, but all were in vain.

DISSECTION.

The body was remarkably pale, and had rather a bloated appearance. The abdomen, particularly examined, exhibited no trace of inflammation. The lungs were perfectly healthy; but the pericardium was much enlarged and evidently distended by a fluid. On opening this bag, a quantity of sero-purulent fluid, with flakes of lymph floating in it, poured out. The surface of the heart and corresponding part of the pericardium were coated with lymph, and presented the usual appearances of acute pericarditis. Indeed I never saw the anatomical characters of acute pericarditis better expressed: and I have preserved it as a specimen of the post mortem appearances which

correspond accurately to the description which Baillie, Corvisart, and Laennec have given of them.

I have seen some cases, which I have not the smallest doubt were cases of rheumatic pericarditis, yield to active medical treatment timely resorted to : but have often seen others, as will be, I fear, the fate of most, terminate fatally, and have ascertained the correctness of my conjectures by examination of the body after death. Sometime ago a boy about fourteen years of age died of this disease in Jervis-street Hospital ; but the progress of the case and the appearance on dissection were so similar to the foregoing, that I shall not take up time by relating them.

Indeed it is scarcely necessary to dwell upon this subject, as rheumatism of the heart, since Doctor Baillie introduced the subject to notice, has been much spoken of.

But it would appear that the distinction between simple rheumatism of the heart and the dangerous case of rheumatic inflammation has not been sufficiently insisted upon. In the one case the organ is simply, and often but transiently affected, just as any other muscle is, the person has perhaps been affected with rheumatic pains in the loins, with but little fever ; these suddenly leaving this region run to the diaphragm, and cause a temporary affection of the breathing, with what the patient calls spasms in the chest. The coun-

tenance undergoes sudden changes: there are at such moments strong beats of the heart, and intermissions of the pulse sensible to the patient; and in females I have sometimes seen such attacks end in an hysteric paroxysm, and all symptoms subside when the lumbar pains returned. In such cases, the tongue is somewhat foul, the skin is frequently relaxed by profuse perspiration, and the urine is remarkably turbid; but the pulse has neither the frequency, hardness, nor peculiar vibratory feel that it has in the other, and more dangerous case: the countenance does not betray that anxiety, or, as it is denominated by some authors, that anguish which it almost uniformly expresses when the membranes of the heart are affected with acute inflammation, from whatsoever cause proceeding. Although simple rheumatism of the muscular structure of the heart may occasionally pass on to carditis, or to an inflammatory affection of the serous membrane of the heart, there cannot be a doubt that the two cases are very distinct from each other, and require treatment so different as to make it highly important for the practitioner to be aware of the risk of mistaking the comparatively simple case of rheumatism of the heart, for the far more urgent and dangerous one of rheumatic inflammation of its serous membrane. The latter disease I have usually seen in children, and persons about, and under the age of puberty, in whom, metastasis seems much more liable to occur, than in those more advanced in life; and the sudden

translation of the rheumatic inflammation to the heart has usually occurred where the synovial system of the extremities was the original seat of the disease: when the muscles have been affected with acute rheumatism, metastasis to the heart has not, to my knowledge, been frequent, although I have seen the diaphragm affected by it in such a manner as to excite apprehensions for a time, that the former more important organ was implicated. There seems to be a greater disposition in the acute inflammation to pass from the synovial membranes to the serous, than to any other tissues; which is not so much to be wondered at, when their great similarity of structure, appearances, and functions, is considered.

If rheumatism affect the heart in this two fold manner, it may be asked whether this important organ is ever similarly affected by gout. That this disease does very frequently affect the heart, exciting agonizing pain in the breast, and giving rise to every species of irregularity in the heart's action, is well known to physicians: but whether any fatal case of metastasis of true arthritic inflammation to the serous membrane of the heart has ever been observed, I am unable to affirm from my experience or enquiries; yet I think it probable if such a case has not as yet been seen or described, that at some future day the attention of the physician will be called to it: gout, above all other diseases, being prone to metastasis, I cannot conceive that the heart

should escape ; the comparative rarity however of gout in these latter times may account for such a case not having been seen, or more properly speaking, not having been yet observed upon. If this were not a just view of the case, gout would form an exception to every other species of inflammation liable to metastasis.

Erysipelas undoubtedly affects the heart ; I have myself known two cases of erysipelas of the head and face which terminated fatally by metastasis to the heart. In one the erysipelas succeeded to a wound in the head, in the other, it came on spontaneously. In both, as soon as the external redness receded, the breathing became distressed, the countenance agitated, and rest in the horizontal position impossible. Yet the general symptoms of pericarditis were so obscure, as to excite no suspicion in the mind of the attendants as to the real nature of the case. Both were weak and debilitated patients, in which this affection supervened towards the close of a long illness : neither lived more than two days after the sudden disappearance from the surface of the erysipelatous redness. The countenance, the breathing, the state of the pulse, and apparent debility in both, seemed to forbid any active interference on the part of the medical attendants, who had no suspicion of the real nature of the case, (so obscure were the symptoms of pericarditis) until the examination of the body disclosed it. The pericardium contained

some turbid fluid, but had contracted no adhesions to the heart. A quantity of lymph, evidently recently effused, lined the concavity of the pericardium, and thickly and unequally covered the surface of the heart itself: appearances which left no doubt as to the immediate cause of the death of these individuals. The late Mr. Thomas Roney and Mr. Cusack met with similar cases; and the latter preserves a specimen of the morbid appearances which the dissection of a similar case presented, in the Museum in Park-street.

These cases, though quoted from memory, and not accompanied with all the necessary details, appear to my mind, to afford very sufficient evidence of such a metastasis; or as some would call it, conversion of disease: such cases have been hinted at, by authors, as having sometimes occurred; but as far as I know, no authentic instances of erysipelas transferred from the surface to the serous membrane of the heart, have ever been laid before the public.

II.—OF CHANGES AFFECTING THE MUSCULAR STRUCTURE OF THE HEART.

The muscular structure of the heart, from various causes which tend to excite a more active nutrition in it, may become increased in its thickness, and the cavities of the organ may at the same time become enlarged. The causes of these changes are sometimes very evident: thus, for

instance, the active enlargement of one of the auricles or ventricles immediately contiguous to a narrowed aperture, sufficiently demonstrates that the parietes of this cavity have become encreased in thickness, in obedience to a well known law, to which all the muscular system yields ; a law which invariably adapts the power of the muscular fibre, to the resistance it has to overcome. Thus, when an aneurism exists at the arch of the aorta, there is a difficult transmission of blood through it : the left ventricle uniformly increases in thickness, and its cavity at the same time becomes dilated, affording us an example of the active enlargement of this ventricle. If there be a contraction between the left auricle and ventricle, the latter is diminished in size, while the former becomes actively enlarged ; the pulmonary veins are dilated as well as the pulmonary artery and whole of the right side of the heart, as may be proved by repeated examples.

Sometimes, without our being able to detect any organic cause, we shall observe cases of active enlargement of the heart, in which all the cavities are equally concerned : here follows a well marked instance of this description in which the increase of the whole organ amounted to such a degree, that the left lung was nearly obliterated by the pressure of the heart, in which there was no valvular disease, no adhesion, in short, to our senses, there was no apparent organic cause for the enlargement.

CASE OF ACTIVE ENLARGEMENT OF THE HEART
WITHOUT ANY VALVULAR DISEASE.

No. 1. A medical gentleman æt. 60, of a sanguineous temperament, and remarkably anxious turn of mind, had, during the earlier part of his life enjoyed good health, with the exception of three rheumatic fevers; the last terminated in a severe attack on his chest, from which period he never was affected by rheumatism either in its acute or chronic form, but his chest became particularly delicate, and during the winter months he was very susceptible of cold; he had habitually a severe cough, and complained of palpitation of the heart and difficulty of breathing, which was much increased by a dense or smoky atmosphere, by going up stairs or any ascent; he was heretofore fond of horse exercise, but he could not ride at a trot, as any rough or jogging motion invariably induced a strong paroxysm of palpitation of the heart. His appetite was good, but his digestion was wretched, and except when he paid the greatest attention to his diet, he was greatly distressed by flatulence: his sleep was very disturbed and uneasy, and he never could rest, except when lying on his left side. His pulse was generally about 70 in a minute, regular, but always remarkably strong, full and vigorous. The chest was well formed, the pulsations of the heart were inordinately strong, and extended over the whole left side of the chest, and

often excited a good deal of alarm in his mind, and more than any other of his symptoms impressed him with a dread that the heart was the seat of his disease ; although usually said to be asthmatic, his breathing was at times tolerably free ; when interested by any favourite professional subject, I have known him speak for more than an hour without interruption ; the difficulty of breathing, however, used to come in violent paroxysms, and on these occasions he always experienced some relief from leaning forward : when obliged to go a distance into the country, he would sometimes seek relief by kneeling down in his carriage, and resting his elbows on the seat would travel miles in this attitude.

Towards the latter period of his illness his cough became very distressing, and the dyspnoea more continued ; he was obliged to confine himself entirely to the house, his limbs began to swell, and the abdomen to fill with water ; his stomach became very irritable, and refused all medicine, and the pulse which was heretofore regular though remarkably strong, full and vibrating, became latterly intermittent ; his intellect was undisturbed until the last 24 hours, when he lost all external sense, became comatose, and died in a subapoplectic state.

DISSECTION.

The external appearances were those which are usual where dropsical symptoms have been pre-

sent before death; a double inguinal hernia (caused probably by the cough and distress in breathing) remained unreduced; the internal organs were all sound except those contained in the thorax; the cartilages of the ribs were completely ossified, and required the use of the saw; the left lung was compressed and reduced to so small a size, and was so condensed in its structure, that it was evident it must have been incapable of performing any function; there was no water in the chest. The heart was enlarged to more than twice its natural size, but differed in no other particular from a well formed heart, proportioned in every respect as to itself, but only disproportioned to the structure, and probably also to the delicate tissues of the individual who was afflicted with this most distressing disease. There was in this case no adhesion of the pericardium to the heart, no valvular disease nor contraction to account for the increased growth of the organ, nor could the compressed lung, or its obstructed vessels, be assigned as its cause: this probably was only secondary, and rather the consequence of the enlargement, and at all events could only account for the increase of size of the right ventricle. Mr. Wilmot made the dissection in the presence of Dr. Perceval, Mr. Duggan, and myself.

With respect to the treatment, it was so nearly similar to that which was for a time found useful in the following case, that I shall omit to

dwell on it here; I may observe, that the decided benefit he occasionally derived from losing some blood from his arm was most remarkable. From having been much with this gentleman for the last two years of his life, and so often observed the great difficulty of breathing; I may state my conviction, that on different occasions he would have been suffocated had it not been for the timely and decided relief venesection afforded him. I shall now copy from my notes the following case, a little more at length than I would otherwise wish to do, because I conceive it presents a very striking example of that too common disease, active enlargement of the heart, and in the various changes which these notes record, are to be seen the occasional benefit to be derived from judicious medical management of a disease, which, like most other organic affections of the heart, is incurable.

**NO. II.—CASE OF ACTIVE ENLARGEMENT OF THE
HEART WITHOUT ANY VALVULAR DISEASE.**

A gentleman, æt. 60 years, of high stature, and a spare though muscular frame, who has led a life of much anxiety and care, the traces of which are observable in his countenance, came to Dublin for medical advice: he was afflicted with severe cough, difficulty of breathing, and palpitation of the heart; he was restless and irritable during the day, and at night such imperfect sleep as he could take, was frequently interrupted by

unpleasant dreams, out of which he would start up with strange imaginations: his stomach was out of order, and he was much distressed after his meals by flatulence, rendering his respiration at these periods more difficult; his skin was cool; his tongue white, though not loaded; his appetite tolerable, and he bore a journey of 30 miles to town without feeling fatigued; the chest was large and well shaped, except that there was an unusual prominence in the situation of the cartilages of the lowest ribs at the left side. The pulsations of the heart were so widely extended as to occupy before and behind the whole left side of the chest, and beat with such force, that the patient's bed appeared to shake at each pulsation. The pulse at the wrist was remarkably full and strong, 90 in a minute, with one regular intermission in each 20 pulsations. This gentleman was himself conscious of every motion of the heart, and he told me, whenever he lay down its pulsations became slower. I found, upon making the experiment, that his remark was correct; while I felt the pulse at the wrist he suddenly assumed by my desire the horizontal position; for the first moment the pulse was irregular and tremulous, and fell exactly to the rate of 30 for a minute, and again resumed the former number of its pulsations. I made the experiment different times with the same result. Anxious to compare his symptoms with those observed in the preceding case; I asked him could he rest at night indifferently upon either side, or bear any rough or

jogging motion? he told me, for many years he could not sleep upon his right side, that he used to be fond of horse exercise, but latterly could not ride at a trot, as it instantaneously brought on violent palpitation of the heart, with an attack of breathlessness. The nature of the disease was now too evident. The previous history of this gentleman's case was, that he had been always tolerably healthy, but that in the last fifteen years he had two attacks, very different from each other, which threatened his existence from their duration or violence. The first was a profuse epistaxis, supposed to be connected with some derangement in his liver. The account of the quantities of blood he lost on this occasion is nearly incredible; ever since he has been sensible of the unpleasant symptom which he now has to so great a degree, the palpitation of the heart. The last attack was supposed to be a violent pneumonia; it was attended with high delirium, and was combated with the most active venesection; in one day it was thought necessary to take away 60 ounces of blood.

Although there was now every reason to believe that active enlargement of the heart was fully established, and that to this might be referred all the symptoms under which this gentleman laboured, still his physicians had a hope that many of them were of the nervous character, and that medicine was available to relieve them. The faulty condition of the digestive organs was first

considered in the treatment ; to procure rest, the want of which was most complained of, the extract of henbane was prescribed ; every effort was made to compose him and remove his own apprehensions ; he was ordered to return to the country and amuse his mind, but avoid business.

October 10, he returned to town worse, and much disappointed at having derived no relief from the medicines prescribed. His countenance, naturally pale and sallow, was now generally livid from excessive coughing, and was at the same time expressive of much anxiety. He was restless, and unwilling to remain more than a few moments in any one position ; and he affirmed, that for several nights he did not enjoy one moment's sleep. His cough was very severe, attended with a thick viscid expectoration, and lasted in fits for hours ; his breathing too was very difficult ; his pulse 100, remarkably firm and full, and now there was no intermission. Various anodynes were fruitlessly tried to procure rest ; æther did not for a moment relieve the dyspnoea : smoking the stramonium, recommended by a friend, was nearly producing suffocation.

Such were the distressing symptoms this gentleman laboured under, when, on consultation his medical attendants determined to try the effect of venesection, and the most rigid antiphlogistic plan of treatment ; to exhibit active purgative medicine ; and in addition, it was

thought advisable to place a caustic issue under the left breast; all which means were immediately resorted to, but without any sensible benefit for some days, when from the distress in the chest, and the urgency of the cough, it became necessary again to bleed him, which was attended with some little relief.

October 16th.—His illness now assumed more of the febrile character, and it became necessary to confine him to bed; his body became hot; his tongue foul and coated, to the point brown and dry; he was disposed to sleep a little, but was repeatedly roused by fits of coughing. In those short intervals of sleep he raved a good deal; his wanderings were rather disposed to a pleasant than melancholy turn. He knew his medical attendants, was quite collected in their presence, but was reported not to be so in speaking to those constantly about him; his pulse ranged about an hundred, and was still without intermission; his breathing was heaving and irregular, and very frequently suspended for a moment or more. He had yesterday a profuse perspiration, after which his fever subsided much, and he awakened perfectly collected in his mind.

He had no consciousness of the last fortnight, he complained now of being very weak; his flesh was greatly reduced, and he desponded much about himself, but his tongue was clean, his pulse about 82 (the regular intermission returned), his

cough much softer and less frequent, and the dyspnoea altogether forgotten, nor was it brought on by the presence of much smoke occasionally in his chamber. During this illness he had been bled twice, had active purgative and diaphoretic medicines, and he drank nothing but whey or barley water. The bowels were now attended to, and easily acted upon by medicine; the secretion of urine was scanty and the oedema of the feet and ancles was increasing. The tincture of digitalis was exhibited, and he took half a grain of opium every night, he was now allowed to leave his bed, and to take vegetables for dinner; his strength daily amended until the 10th of November, when his cough had become troublesome, and there was some bloody expectoration; it again became necessary to bleed him.

From this time he improved progressively; for three weeks he was able to be out in the open air for several hours during the day, and a slight opiate at night procured rest; his cough and dyspnoea were no longer complained of. He felt so well he became anxious to dine at his usual hour, and resume his ordinary regimen. In a few days the effect of the animal food, which was reluctantly allowed him, was quite perceptible on his person, but it was also remarked that his countenance became anxious, his breathing hurried and irregular, his cough returned, and his rest was nearly as bad as heretofore; the state of his pulse, together with the other symptoms, again

called for the lancet ; venesection was now (27th of November) performed, and was soon followed by the accustomed relief.

R. Calomel gr. iij, Pulv. Ipecacuanhæ Comp. gr. iv. divide in pilulas duas hora somni sumendas.

Animal food was altogether prohibited ; a small quantity of white fish allowed for dinner occasionally, and for the swelling of the feet and legs, the tincture of digitalis was in increasing doses daily exhibited. In this way was this gentleman's life prolonged, every symptom was palliated as it presented itself, the cough and dyspnoea were always more or less relieved by venesection : the swelling of the limbs would remain obstinate for a time, and general dropsy be apprehended, then the kidneys would act, and the quantity of urine which would be evacuated was surprising. We ascertained that for several nights in succession above four quarts of urine were evacuated : at this time the thirst was not urgent, and he drank but little ; the œdema of the feet and legs, after these extraordinary evacuations, would totally disappear, and perhaps for weeks there would be no return of the swelling.

The diuretic medicine would now be laid aside, but its effects would continue; and whenever the quantity of urine flowing naturally, or produced by medicine, was abundant there would be no œdema. He rallied so much that from January

to the middle of May, he was capable of attending to business: he had returned to the country early in the spring; he no longer required an opiate to procure rest. The cough, dyspnoea, and palpitation, were not troublesome so long as he strictly adhered to the vegetable regimen; but the slightest deviation from the general plan laid down did not fail to be followed by some threatening of his former symptoms.

Although he could not now be said to enjoy health, still he would have felt greatly satisfied with the comparative freedom from illness which he enjoyed, if it were not for the constant intrusion on his mind that he was altogether indebted for it to the strict regimen he observed.

About the middle of May the swellings again appeared in his limbs, and increased rapidly; and all his former symptoms returned.

The dyspnoea was particularly urgent; a large bleeding was now performed, at his own request, without the least benefit. Towards the latter end of June, the diuretic medicine, no matter how varied, produced no other effect than to sicken the stomach. The abdomen became much distended with water, and there was sufficient evidence of effusion into the chest having taken place.

On the 7th of July his countenance changed

suddenly ; he complained of violent pain in the abdomen, which would not bear the slightest pressure ; every remedy that was tried failed to alleviate it even for a moment. In this manner an unexpected mode of death by peritonitis supervened, which terminated the sufferings of this gentleman on the 8th of July, 1819.

EXAMINATION OF THE BODY,
twenty-seven hours after death, July 10th 1819.

External surface. The inferior limbs anasar-
eous. The face bloated. The abdomen much
swollen, as if distended by air and water.

Cavity of the abdomen. The serous surface of
the stomach and intestines presented evident
marks of recent inflammation ; coagulated lymph
of a dark brown colour covered in patches the
ileum and stomach ; and beneath and about this
lymph the small vessels were injected with blood.

The liver was changed to a light brick colour ;
and was connected by old adhesions to the con-
cavity of the diaphragm, from which it was insepa-
rable. The serous covering of the liver was
opaque and thickened ; and this membrane, where
it covered the gall bladder, was whitish, and
did not permit the usual transudation of bile.
Sections of the liver exhibited no morbid altera-
tion of its interior.

The spleen was pale and much contracted in size. The right kidney, smaller than natural, contained hydatids. The left kidney, was quite natural; as were the ducts and vessels of both organs. A turbid brown coloured serum occupied the cavity of the abdomen.

Thorax. The cartilages of the ribs were completely ossified, and required the use of the saw. The cavity of the right side contained about seven quarts of whey-coloured serum. Two-thirds of the right lung were converted into a solid substance; which portion sunk in water, the rest floated, and was pervious to air. The left lung was perfectly sound, and had contracted no adhesions to the side.

When the sternum was raised to which the pericardium was strongly adherent, it was evident that the heart was greatly enlarged.

Almost the entire of the contiguous surface of the heart and pericardium was firmly connected by a cellular adhesion. The heart itself was fully three times its natural size: the parietes of both ventricles were greatly thickened, but particularly the left; at one spot only, towards the root of the pulmonary artery, the right ventricle appeared thin and weak. The muscular structure of the interior of the organ was much developed. The carneæ columnæ of the right side were remarkably

prominent, and those of the left also were greatly thickened and enlarged. The valvular apparatus of both sides was perfect : we could discover no bony or earthy deposition either in the heart or in any part of the arterial system. All present agreed that they had never seen a heart so much enlarged.

In these two cases of active enlargement of the heart, there were many points of resemblance. They were both men of the same temperament, and anxious turn of mind so often found associated with this disease ; the same description of motion and exercise brought on in each an increase of their most distressing symptoms, and the same remedies, or rather palliatives, were resorted to for a time with the same success in both.

In the first case, the origin of the disease was referred to rheumatism in some shape, as the rheumatic fevers which used to visit this gentleman at stated intervals ceased to recur from the time his chest became engaged, an effect which has been before observed ; and if it be admitted that repeated attacks of simple rheumatism of the heart may cause its enlargement, it places in another point of view the propriety of keeping distinct in our mind the two forms of rheumatism of the heart, viz. that wherein the muscular structure alone is the seat of the disease, and the far more urgent one of rheumatic inflammation of its

serous membrane, an example of which, page 365, I have before given, and which may be contrasted with that now under consideration.

In the 2d case, the symptoms which first announced that there was something irregular in the action of the heart, were referred to a very early date, even to the time when this gentleman was only recovering from the profuse and continued hæmorrhage with which he had been afflicted at a remote period before his last illness. It appears to me by no means irrational to conclude that the very excited condition of the heart, which always attends and succeeds profuse bleeding, must in certain constitutions be favourable to the development of such a disease as this patient laboured under.

The acute attack, attended with high delirium and great vascular action, supposed to have been pneumonia, which a year before he died, visited him, was no doubt pericarditis, which terminated in extensive adhesion of the pericardium to the heart, a new cause for the increase of growth of the organ, and the more rapid progress of the disease afterwards.

Although we not unusually find the heart enlarged where the pericardium is adherent to it this has never been, as far as I know, referred to, as a cause of its inordinate growth; yet when we reflect that in the natural state the heart has

no vascular connexion with the surrounding organs, and is only supplied with two small arteries, we can readily conceive what a new impulse its nutrition must derive from the immense number of vessels which from the adherent pericardium will pass directly into the muscular substance of the heart. Under such circumstances we may as fairly attribute enlargement of the heart to the pericardium, as the unlimited growth of a tumour to the organised cyst which contains it.

In this latter case, No. 2, there was more inflammatory action than in the former; hence probably the great benefit derived from rigid abstinence for a time, and the very strict antiphlogistic regimen that was observed, the least departure from which brought back a renewal of the symptoms. In the former case diet was not so much attended to by the patient; and the relief he so frequently, and so immediately obtained from bleeding was to be accounted for, not so much in that it counteracted inflammatory action as that the irritability of the heart was diminished by it, and the compressed lungs relieved of too great a quantity of blood circulating through them. In these two cases, towards their close, dropsy supervened, which for a time was controlled by diuretic medicines; these, at length, the stomach, in every shape, rejected. The limbs then swelled, and the breathing became difficult at a time when, from the general debility, bleeding could not, as before, be resorted to.

In the first case, for 24 hours before death there was complete insensibility, and loss of voluntary motion, &c. and the subject of it died, as it is stated, in a subapoplectic state, in which there was nothing very unusual. But in the history of the termination of the second case, it may excite surprise that acute peritonitis should have visited a person so worn out, and debilitated by the combined effect of his original disease, and the symptomatic dropsy; yet I have seen acute inflammations of the serous membranes set in with violence and rapidly put a fatal end to chronic disease; I have moreover known many instances of dropsy to merge spontaneously in acute peritonitis.

Although active enlargement of the heart, like most of the diseases of the organ, is towards its close usually attended with dropsy, yet sometimes before the period that disease might be expected to set in, life is brought to a sudden termination by apoplexy.

The opinion has not obtained universal assent, that in such cases enlargement of the heart is the cause of the sudden event; yet it would appear to me that the observations of Bricheteau, Richerand, Corvisart, and Johnson, are conclusive on this head.

In the following case, although apoplexy was not the immediate cause of death, it is probable

that such would have been its mode of termination, had not the aorta given way. This case strikingly elucidates the connexion between apoplexy and active enlargement of the heart.

February 20th, 1822. I was called to visit a gentleman in my neighbourhood, aged 50 years; who had suddenly fallen down, as reported to me, in an apoplectic fit. I found him in a state of complete insensibility; his face (naturally pale and sickly) was now red and bloated; his breathing stertorous, with a slow pulse, the action of the heart and carotid arteries unusually strong. I lost no time in taking away blood from his arm, and in resorting to the usual means in such cases; he slowly recovered his senses; not however without its having been found necessary to repeat the venesection, which was determined upon in a consultation between Mr. Carmichael and myself. Leeches were also applied to the temples. Upon inquiry into this gentleman's mode of life and state of constitution, I was informed that he had been tolerably healthy, except that he was liable to slight attacks in his chest: that he led a very active life in the country, and was accustomed to much exercise: that about the year 1819, his affairs suffered a great reverse, and that ever since that period his spirits drooped; he became averse to exercise, and complained of palpitation of the heart; that in the last year he had two apoplectic attacks, exactly resembling that which I had just wit-

nessed : from these he recovered without any paralysis of the muscles, except that his mouth was drawn a little to one side ; and after each attack his articulation became less intelligible, his mind became childish, his temper irritable, and his memory failed him. The effects of this last attack of apoplexy passed off like the former, and he remained for three months much as he had been before it. In April I was again called upon to visit him, as he was taken alarmingly ill. I found him in a faint, though not insensible ; his countenance ghastly, his pulse weak and rapid, his extremities cold. Venesection, which on all former occasions seemed to afford him almost immediate relief, from the state of the circulation was not now resorted to. He lived but fourteen hours.

DISSECTION.

The brain was of a yellowish colour, and somewhat looser in its texture than natural ; but there were no apoplectic cells, no effusion of blood, nor appearance of there ever having been any extravasation of blood in it. The lungs were sound, but the pericardium was largely distended with blood, partly fluid, and partly coagulated ; when this was removed it was found to have proceeded from a rent in the aorta about a quarter of an inch in length. The whole heart was greatly enlarged, and the left ventricle was much increased in thickness, the heart was otherwise natural ; the remaining viscera were sound. Dr. Law assisted me in this dissection. The specimen is preserved by

Dr. Macartney, Professor of Anatomy and Surgery in Trinity College.

In this case it appears but rational to conclude that the apoplectic symptoms and attacks with which this gentleman was visited, arose from the too great violence with which the left ventricle poured the blood upon the brain, and which might have produced death as in ordinary apoplexy, by distending so as to rupture some of the capillary vessels of this organ, had not the great trunk of the arterial system first given way.

There is a sufficient number of cases before the profession to prove beyond all manner of doubt this connexion between apoplexy and active enlargement of the heart ; but it appears to me that the attention of the physician has not been sufficiently directed to the fact, that apoplexy may be the result of a state of the heart altogether different from that we have been just considering ; I shall however reserve any observations I may have to make upon this subject, until I shall have related the succeeding case, which bears upon this point, and at the same time exhibits an example not very common of a change of the muscular structure of the heart into fat. I shall merely premise, that in this case the impulse a tergo could have had no influence in producing the apoplectic death by which this case terminated, indeed the left ventricle was so weak, and its parietes so reduced, that at first sight it excited

our surprise that it was at all capable of carrying on the circulation, which was not a little increased, when on a close examination it was discovered that the valves of the aorta had become, from cartilaginous and earthy depositions, so rigid as to retain water, whether poured upon them from the artery or from the ventricle, the contact of their edges was preserved in such a manner that it required that a fluid should be injected from the heart with some little force to render this arterial opening pervious.

That the muscular fibre entering into the composition of the muscles of the body was occasionally to be found converted into fat, has been long known, but that the internal muscles, or those more essentially concerned in carrying on the vital functions were subject to this change, seemed until lately to have wanted the confirmation of a single well authenticated fact. We find late authors, no doubt, frequently alluding to such a morbid condition of the heart; but they rather refer us to older writers, than adduce examples of it from their own experience. Corvisart, alluding to this state of the heart, says modern anatomists have observed it, "no doubt they will some day publish these interesting facts, but speaking for myself, I have never seen this change." Later writers express their opinions, that some mistakes may have arisen from the distinction not having been made between the case of true conversion of

the muscular tissue into fat, and that in which a thick layer of adipose matter envelopes the whole of the heart's surface; they doubt whether this latter condition of the heart should be considered pathological, or could produce symptoms immediately depending on this accumulation, and look upon this case as very different from that degeneration of the muscular tissue into a fatty substance, which in the external muscles, as the *solæi*, &c. is so often observed. Although such observations may be in a great measure true, and it may be difficult to demonstrate the exact difference between these cases, or how such changes take place, it is no less certain that the muscular substance of the heart occasionally disappears (the thin reticulated lining and weakened septum alone remaining), while true adipose substance is found to have taken possession of the place which muscular fibre before occupied. It seems moreover proved that this morbid condition of the organ may produce death, which from the few facts of this nature with which we are yet acquainted, we suspect will be sudden, and generally preceded by the usual symptoms which attend apoplexy.

There is a remarkable case of this description given by Dr. Cheyne, in the 2d volume of the *Dublin Hospital Reports*; he prefaces the history of this case with the remark that doubts have been entertained of the conversion of the heart into fat, and that only one case as far as

he knew, had been published illustrative of that very curious morbid alteration.—In Dr. Cheyne's case the patient died of apoplexy, which he supposes must have depended upon encreased action of the vessels of the head, as the heart itself was apparently incapable of communicating much impetus to the circulating mass.

The following case, in many particulars, and in its termination, resembled that above alluded to :

An officer in the revenue, aged 68 years, of a full habit of body, had for a long time been incapable of any exertion, as he was subject to oppression of his breathing and continued cough. In May 1819, in conjunction with his ordinary medical attendant, Mr. Duggan, I saw this gentleman: he was just then recovering from the effects of an apoplectic attack, which had suddenly seized him three days before. He was well enough to be about his house, and even to go out. But he was oppressed by stupor, having a constant disposition to sleep, and still a very troublesome cough. What most attracted my attention was, the irregularity of his breathing, and remarkable slowness of the pulse, which generally ranged at the rate of 30 in a minute. Mr. Duggan informed me that he had been in almost continual attendance on this gentleman for the last seven years; and that during that period he had seen him, he is quite certain, in not less than twenty

apoplectic attacks. Before each of them he was observed, for a day or two, heavy and lethargic, with loss of memory. He would then fall down in a state of complete insensibility, and was on several occasions hurt by the fall. When they attacked him, his pulse would become even slower than usual; his breathing loudly stertorous. He was bled without loss of time, and the most active purgative medicines were exhibited. As a preventive measure, a large issue was inserted in the neck, and a spare regimen was directed for him. He recovered from these attacks without any paralysis. Œdema of the feet and ancles came on early in December; his cough became more urgent, and his breathing more oppressed; his faculties too became weaker.

November 4th, 1819, he was suddenly seized with an apoplectic attack, which in two hours carried him off, before the arrival of his medical attendant.

DISSECTION,

56 hours after death.

The dura mater presented a natural appearance. The arachnoid membrane was separated from the pia mater by a fluid of gelatinous appearance. The substance of the brain was watery and of a yellowish white colour. There was some water in the ventricles. These cavities did not appear enlarged, but the foramen

of communication between them was dilated. The coats of the carotid and middle arteries of the dura mater were quite white and opaque from bony deposition, but were pervious.

The right lung was sound. The left was compressed, and adhered to the side of the thorax: about a pint of serum and quantities of soft fat, of a very deep yellow colour, filled up the space between the anterior mediastinum and the compressed lung, which was impervious to air, and must have been totally useless.

The right auricle of the heart was much dilated. The right ventricle externally presented no appearance whatever of muscular fibres: it seemed composed of fat through almost its whole substance, of the same deep yellow colour as that which occupied the place of the left lung. The reticulated lining of the ventricle, which here and there allowed the fat to appear between its fibres, alone presented any appearance of muscular structure.

The left ventricle was very thin, and its whole surface was covered with a layer of fat. Beneath this, the muscular structure was not a line in thickness; it had degenerated from its natural state; was soft, and easily torn, and a section of it exhibited more the appearance of liver than of a heart. The septum of the ventricles presented

the same appearance. In both ventricles, even in the lining fibres, yellow spots, where fat had occupied the place of muscular structure, were to be observed. The whole organ was remarkably light; the valves were all sound, except those of the aorta, which were studded with specks of bone, but elsewhere were cartilaginous and elastic, from which they derived a disposition to remain closed; a fluid gently injected from the ventricle would pass them; still, when the heart was reversed and water poured from the ventricle upon them, their valves retained it; its weight was not sufficient to separate the edges of the thickened valves. There was much fluid blood contained in the heart.

The liver was natural; the vena porta was unusually distended. The spleen was healthy in its structure, although enlarged; the other viscera presented nothing unusual.

In both these cases, No. 1 and No. 2; apoplexy must be considered less a disease in itself than symptomatic of one, the organic seat of which was in the heart; although during life there was much analogy in their symptoms, the examination of the bodies after death disclosed a state of the heart altogether different; in one the ventricle was found nearly an inch in thickness, while in the other, fat had so accumu-

lated at the expense of the muscular structure, that it was scarcely a line in depth. The explanation of the fact how causes so different could have produced effects nearly similar, will, I imagine, be found in the reflection, that any thing occasioning an undue distention of the vessels of the brain, may be followed by apoplexy. This over distension may arise from the impulse a tergo being preternaturally strong, or on the contrary, it may be the result of some obstruction in front, as that arising from a contracted arterial opening, or some state of the ventricle incapacitating it from emptying itself with sufficient quickness to relieve the brain. Indeed, upon considering the latter condition of things, where the heart is slow in transmitting the blood it receives, we find, I imagine, even in this a means of accounting for the lethargy, loss of memory, and vertigo, which attends these cases. For the venous blood, which under such circumstances, is supposed to accumulate in the brain, is evidently ill-suited to the functions of this organ. Although the quality of the blood may thus be supposed to have some influence in producing these bad consequences, yet it is probable that the principal causes determining an apoplectic attack where the heart is either actively enlarged, or in a state of atrophy, are mechanical and referable to circumstances in the heart, directly or indirectly producing a state of congestion of the vascular system of the brain.

OF RUPTURE OF THE HEART, ANEURISM, AND RUPTURE OF THE CORDÆ TENDINEÆ.

Sometimes the muscular substance of the heart, constituting the whole thickness of the ventricles, at a certain point gives way, and death instantaneously occurs; there are however cases on record wherein this event did not so immediately follow the rupture of the heart, in which it is supposed that the blood has quickly coagulated, and thereby effected such pressure on the lacerated aperture in the ventricle as for several hours to retard the fatal result.

From some cause not as yet sufficiently known, perhaps from some weakening or rupture in the muscular fibres of the heart, an aneurismal cavity is formed, which communicates with one of the ventricles; the walls of this cavity, however constructed, are partially projected into a tumour which is covered by the membranes of the heart, and has been found to contain within it laminated coagula as in arterial aneurisms: the tendency of this disease is to go on encreasing until the sac bursts, as in ordinary aneurism, when death immediately ensues.

By the proofs of the existence of such a state a complete analogy is established between this disease of the heart and aneurism, as it exists in the arteries; and the impropriety of the applica-

tion of the term aneurism of the heart, as used by many authors to denote enlargement of the organ, is consequently evinced.

Lastly, the *cordæ tendinæ* which connect the auriculo-ventricular valves to the walls of the ventricles are sometimes torn, and the accident is soon followed by a train of the most distressing symptoms, which art can but little alleviate, and which speedily terminate in death.

RUPTURE OF THE HEART.

For the following case I am indebted to Dr. Cheyne, Physician General, I beg leave to give it in his own words.

A gentlewoman, upwards of sixty years of age, of a corpulent habit of body, and confined bowels was, on the 8th of August 1825, attacked with pain in the epigastrium. Fomentations and liniments were applied to the abdomen, and pills were taken containing blue pill and calomel. On the morning of the 9th, the evacuation from her bowels, not being considered sufficient, a purgative draught, consisting of infusion and tincture of senna and Rochelle salts, was given, and a terebinthinate enema, and she was bled. No relief having been obtained, I was called to see her at 5 o'clock, and considering the pain to be seated in the gall duct, and probably to arise from the

obstructed passage of a gall stone, I prescribed an opiate, which however she never took, for I had scarcely left her house when she had a fit of vomiting attended with some straining, at the end of which she sighed once or twice, and expired.

DISSECTION.

There was an unusual quantity of fat under the skin. The pericardium was distended with blood, partly fluid and partly coagulated. The blood had escaped from a rupture, nearly an inch in length, on the anterior part of the left ventricle. The muscular fibre of the heart was remarkably soft in its structure, so as to admit of being broken down between the finger and thumb. The heart was unusually loaded with fat; the liver was irregular in its surface, and rather enlarged; the gall bladder was contracted, and contained three calculi, the largest of which was lodged in the mouth of the cystic duct, and completely obstructed the passage of the cystic bile.

RUPTURE OF THE HEART.

Mr. Colles, Professor of Anatomy and Surgery to the College of Surgeons, informs me of the case of a gentleman who had marked apoplectic symptoms, for which he was bled, and had an issue inserted in his arm; about a week afterwards, one morning while this gentleman was in the water closet, he suddenly fell down dead.

DISSECTION.

The contents of the cranium were sound ; the pericardium was distended with blood ; when this was removed, the whole surface of the heart was found coated with fat ; on the anterior and upper part of the left ventricle there was a large bloody spot, immediately beneath which there was a laceration of the left ventricle, through which a large bougie could be readily passed ; through this the blood had escaped, which accounted for the sudden death of this gentleman : the substance of the organ was soft and flabby ; there was no disease of its valves or vessels.

The specimen is preserved in the Museum of the College of Surgeons.

CASE OF ACTIVE ENLARGEMENT OF THE HEART WITH
RUPTURE OF THE CORDÆ TENDINÆ OF THE
MITRAL VALVE, COMMUNICATED BY DR. CHEYNE.

In the beginning of September a musician, 34 years of age, of a very robust frame, sanguine temperament, and corpulent habit, being at Limerick, where he belonged to the orchestra, and leading a life of irregularity and intemperance, exposed to heats and colds, was seized with a most acute pain in the left side of the thorax, precisely in the region of the heart ; at one time it was so acute as to render him nearly frantic ; five or

six persons could scarcely hold him down in bed ; he had a dry cough, his breathing was oppressed, from which oppression he had most relief when leaning forward inclined to the left side, in which position he usually sat. He recovered partially and went to Cork, the pain continuing in a degree, with some *stuffing*, as he called it, and cough ; towards the end of September, he went to Cove with the intention of returning by sea to Dublin. He there lived on board a coasting vessel for a fortnight waiting in vain for a favourable wind, much exposed to cold, and daily becoming worse ; at last, impatient of the delay, he walked back to Cork, to return on the Mail and it was after this walk that he first observed an œdematous swelling of his ancles, which gradually extended to his thighs.

On the 12th October 1813, this poor man had been free from pain for several days. The stroke of the heart was indistinct, tremulous, and appeared to extend over the whole of the left side of the chest, from above the clavicle to below the scrobiculus cordis ; at no one part between these points was the stroke more distinct than at another. His pulse was 148, unequal, irregular and indistinct ; his complexion was of a leaden colour, his countenance bloated, his eye staring and wild. His recollection was becoming indistinct ; unable to lie down, he passed the night in his chair. His appetite was not much impaired, but he was flatulent and costive ; his tongue was furred, its edges

were livid. His urine was scanty, high coloured and lateritious.

A walk of not more than a few hundred yards wonderfully added to the disturbance of the vital functions. While such an exertion increased the dyspnoea, it gave strength and distinctness to the stroke of the artery. His abdomen was swelled, and evidently contained a fluid. He died without a struggle on the night of the 15th of October.

The following were the appearances on the dissection, which the Surgeon General, who had humanely visited this man, permitted me to attend. On cutting through the cartilages of the ribs the fluid, which was in immense quantity, spouted up to some height—in the right cavity of the thorax there were several quarts of fluid. There were no adhesions between the pleuræ, the lungs were sound. The pericardium contained a considerable quantity of fluid. The heart was so large that it resembled the heart of a bullock, the parietes of the left ventricle were thickened, its internal surface much inflamed, various irregular excrescences grew from the mitral valves and semilunar valves of the aorta, and the cordæ tendinæ, which connect the larger portion of the mitral valve to the walls of the left ventricle, were torn off just at the point of their insertion into the edge of the valve; at this point there were also some of the above mentioned excrescences; four of the broken cordæ tendinæ hung loose into the ventricle.

ANEURISM OF THE HEART.

There is no disease more familiarly spoken of than aneurism of the heart, yet the affection, which is with propriety so denominated, is exceedingly rare. Corvisart and Baillie have each seen but a single instance of it. In Sir Astley Cooper's Lectures it is stated, that he has known three examples of this disease, one of the cases which he had an opportunity of seeing was that of a soldier who had suffered a severe flogging, and during the punishment he held his breath : he shortly after complained of a violent pain in his chest, which was quickly followed by ascites and œdema of the inferior extremities. He died suddenly, and on inspecting his body it was reported to him that an aneurism, which had been formed in the left ventricle, had burst into the cavity of the pleura on the left side.

Partial dilatations of the left ventricle, as in Dr. Baillie's case, are sometimes, though very rarely, met with. Dr. Cusack shewed me a specimen preserved in the museum in Park-street, in which the left ventricle is partially dilated into a pouch large enough to contain a walnut; there were no laminated coagula contained in it. Of the history of the case nothing very particular could be collected, the man died suddenly. A large quantity of water was found in the pericardium.

The most perfect specimen of this disease that has come to my knowledge was met with by my friend Mr. Harrison, Demonstrator of Anatomy to the Royal College of Surgeons, who has deposited the heart in the Museum of the College of Surgeons ; and I subjoin, in Mr. Harrison's own words, the history of this case, with an account of the dissection.

CASE OF ANEURISM OF THE HEART.

Jane Halfpenny, æt 39, was naturally of the sanguineous temperament, but her appearance had been altered by habits of profligacy and dissipation of the lowest description ; her flesh was flabby, and her countenance was somewhat of a purple cast. This unfortunate woman was deaf and dumb, and seemed to have no friend in the world, consequently but a very imperfect account could be obtained of the history of her health previous to admission into the hospital ; her pulse was full and quick, her tongue white, most of her distress seemed confined to the chest, her breathing was difficult, her lips livid, and she pointed to the region of her heart, when attempting to give an idea of her situation to her medical attendant. She was discharged in ten days from the hospital, having obtained great relief from medical treatment, rest, and confinement in a place where she was restricted from the use of spirituous liquors, to which she had been for the

last five years addicted : her treatment consisted in the application of a blister over the region of the heart, two large bleedings, and the daily exhibition of purgative medicines. On the 19th of July 1823, she was again admitted into hospital with all the symptoms formerly complained of, now greatly increased ; the action of the heart was so violent as to be perceptible through the patient's dress. When the hand was applied over the region of the heart, she was reluctant to allow the least pressure to be made, as it seemed to give intolerable pain : the pulsations of the organ against the 5th and 6th intercostal spaces were unusually strong and distinct ; her countenance was bloated, and of a livid hue ; she was afflicted with paroxysms of difficult breathing, her feet and limbs were anasarcons ; her pulse was feeble, rapid and intermitting : she apparently underwent a temporary improvement for a day, from the good effects of bleeding, blistering, and small doses of the tartar emetic solution ; but on the succeeding day she suddenly became restless, her countenance indicated great distress in the chest, she seemed each moment on the point of suffocation, and could only breathe when raised up and supported in bed ; her extremities became cold, her pulse weak, indistinct, too rapid to be counted ; and on the following night, the 23d of July, she expired.

DISSECTION

Of the body 36 hours after death.

The thorax was well formed; in raising the sternum, I was struck with the unusual size of the pericardium, its opacity and great firmness, particularly towards the apex of the heart, where it was distended by a tumour of considerable magnitude; the internal surface of the left lung (which did not collapse when exposed, in consequence of a firm adhesion to the parietes of the thorax) was so intimately connected with the pericardium, that it was difficult to separate it; the phrenic nerve was imbedded in a quantity of adhesive matter, the result of inflammation, which connected the lung to the pericardium, and was thrown from its usual situation backwards and behind the apex of the heart; except for the adhesion above mentioned, the lungs were healthy. The pericardium was found unusually adherent to the heart; when it was removed from the anterior part of the heart, this organ being now more clearly exposed, was found to be thrown forward by a large round tumour of a very firm consistence, which was situated behind and below the apex of the heart; this tumour was nearly as large as the heart itself, and much more firm to the touch; it was inseparably attached to the left ventricle, and to the pericardium; in some parts it was as firm as bone, and small patches of calcareous matter could be felt in different situ-

ations. Inferiorly the tumour rested on, and was closely attached to, the central tendon of the diaphragm; anteriorly it was intimately connected with the pleura, the cartilages of the 5th, 6th and 7th ribs, and the intervening muscles; this latter connexion required to be cautiously dissected through, as the sac was here very thin, though as hard as bone. Upon making a small incision into the tumour posteriorly, I found that the sac was very thin, and similar to that of an old arterial aneurism; it was lined with a stratum of chalky or calcareous substance, which in some spots was so firm as to resist the knife; the sac in this situation was about the thickness of a wafer, and appeared to be formed solely of the condensed and altered pericardium; elsewhere the sac was found much thicker, and appeared to have been formed not only by the pericardium, but also by the fleshy substance, and lining membrane of the heart; in some places the fleshy fibres, after a short course, became so condensed and pale as to lose all appearance of muscle; in all other situations the pericardium and lining membrane of the heart were closely connected, except where, in a few small patches, some earthy depositions intervened; at the lowest part of the tumour the sac appeared to be formed solely of the thickened pericardium.

From this examination I was disposed to infer that the aneurismal sac had been formed in the first instance by a dilatation of the three structures;

viz. the pericardium, the muscular substance, and the lining membrane of the ventricle; but that, as the tumour increased in size, the lining membrane and muscular substance were absorbed, so that the pericardium alone remained to circumscribe the disease and to confine the blood within the cavity; which purposes had been accomplished by the process of interstitial growth which nature had actively excited, thereby rendering this membrane so extraordinarily dense and strong that it was enabled to resist (probably for a long period) the action of the heart itself.

The sac was filled with a firm coagulated mass of a greyish colour and of a laminated texture, like the ordinary coagula in arterial aneurism. I next examined the cavities of the heart, and found nothing unusual in the right or left auricle, or in the auriculo-ventricular valves: the right ventricle was healthy, as also the valves of the pulmonary artery and aorta. Having divided the anterior part of the left ventricle, I remarked the lining membrane of this cavity to be unusually dense and white; its muscular structure was natural, perhaps it was somewhat increased in thickness: at the inferior part of this cavity, that is, near the apex of the heart, I observed a circular clot of blood about the size of a half crown; this clot filled the mouth of the aneurism, and appeared to have been recently coagulated; its surface was cupped and not very firm; its circular edge, which was well defined, was nearly in

apposition with, and did not adhere to the edge of the opening: on making a section of the tumour anteriorly, I discovered that a considerable portion of the parietes of the sac had been formed by a dilatation of the muscular substance of the heart. At the upper part of the tumour the lining membrane was peculiarly firm, and the muscular coat very distinct: lower down, the latter became condensed, and was converted into a cartilaginous substance with bony plates dispersed through it; and still lower, the sac was formed merely of the condensed pericardium, lined with some calcareous matter: this part of the sac was in very intimate adhesion with the parietes of the chest, and from the extent to which the process of interstitial absorption had been carried, there can be no doubt but a short period would have brought it to the surface as, in the 5th and 6th intercostal spaces, the tumour was only covered by the integuments and by the intercostal muscles, which had become pale and thin. On examining the cut edges of the coagulated mass which filled the tumour, the whole appeared to be formed of successive layers of coagulated blood; these farthest from the heart were pale and firm; while those nearer the cavity of the ventricle being more recently formed, were softer and of a redder colour. In the abdomen no morbid appearances were observable; the urinary bladder was distended with clear urine; the uterus appeared healthy; the right ovarium

was distended into a sac filled with about four ounces of albuminous fluid:

On examining the contents of the cranium, I observed the arachnoid or serous membrane of the brain, on the upper surface of each hemisphere, particularly near the longitudinal sinus, to be more dense and white than natural, also a slight gelatinous effusion beneath it: no other morbid appearance was observable in the membrane of the brain, and the structure of that organ itself appeared perfectly healthy.

III.—OF ORGANIC CHANGES AFFECTING THE ARTERIAL AND AURICULAR OPENINGS OF THE VENTRICLES.

The arterial and auricular openings of the ventricles are liable to contractions, which are invariably combined with some cartilaginous or osseous depositions. Such alterations in the structure of the heart disturbs the circulation in a very remarkable manner, and produces great derangement in the functions of almost every organ in the body. It has been remarked by Bichat, that the right side of the heart is never to be found the seat of the cartilaginous or earthy depositions in which these contractions originate; but subsequent observers have seen the valves of the pulmonary artery, and the tricuspidal valves also, encrusted with bone. In my own experience,

some instances have occurred, in which the tricuspidal valve was beset with bony specks, and I have known the pulmonary artery to be similarly affected; but I have never found the right auriculo-ventricular aperture, the seat of that peculiar organic change which is so often to be met with at the left side of the heart, and I am therefore inclined to believe it to be exceedingly rare; on the contrary, the organic disease which consists in a narrowing of the left auriculo-ventricular aperture, I have reason to believe, is much more frequent than is generally supposed; a conclusion I have come to from the number of such cases I have met within a few years.

This is a disease which, according to my observation, shews itself at all periods of life occurring in the young as well as the old, and unlike other diseases of the heart and vascular system, it manifests itself as frequently in the female as the male. The signs of this complaint in its first stage are so vague and equivocal, that they are usually set down as nervous symptoms; unfortunately the prognosis is generally unguarded, and a line of treatment calculated to aggravate rather than relieve the organic disease, is prescribed.

We seldom have an opportunity of ascertaining the actual state of the auriculo-ventricular opening in the early stage of this disease, as death

rarely occurs until the person is worn out by a long train of suffering, and the aperture of communication between the left auricle and ventricle is converted into a mere fissure ; I have however known two instances in which the patients were suddenly carried off early in this disease ; the one by apoplexy, the other by epilepsy, which were evidently the consequence of the difficult transmission of blood through the left side of the heart, by which, the functions of the brain were so disturbed that these fatal effects were produced.

I shall briefly give the history of these two cases :

No. I.—CASE OF CONTRACTION OF THE LEFT AURICULO-VENTRICULAR OPENING.

I was requested to examine the body of a lady aged 45, who had died suddenly in an apoplectic fit, as reported to me. The body was remarkably fat. In the brain there was no effusion of blood or water in the ventricles, nor in fact was there any thing different from the natural state observable, except that the arachnoid membrane was slightly raised from the cerebral convolutions by a turbid serous effusion ; nothing however, was remarked sufficient to denote an apoplectic death, which was the more carefully sought for, as it was expected we should find in the brain appearances to account for the fatal termination.

The lungs were natural ; there was much fat

in the mediastinum. The heart appeared remarkably short and was rounded towards its apex; in the interior of the organ every thing was natural except the mitral valve, which as yet, was not beset with earthy concretions, but was shortened to more than half its natural depth. It was yellow, opaque, and at the same time thickened as if a cartilaginous substance had been deposited between its laminæ; the aperture which the edges of this valve circumscribed was sufficiently open to allow the blood a free passage from the auricle into the ventricle; but it was manifestly incompetent to perform the full office of a valve, or prevent a regurgitation of blood into the auricle during the contractions of the ventricle.

Such a state of the heart accounted for many ill-defined sensations about the precordial region, which were called nervous, of which this lady had habitually complained for nearly a year before her sudden dissolution. She had occasional oppression of breathing, palpitation of the heart, with a small pulse; but the symptom of moment (from which some warning of what did so unexpectedly occur might perhaps have been taken) was, that while her countenance did not wear the least sign of indisposition, and while she had every external appearance of health, her pulse^r was weak, small, and never to be felt beating less than 120 in a minute. Although this state of the pulse was habitual, there was no other symptom of pyrexia present; the body

was rather disposed to fatness and plethora than to wasting; the spirits, rest, and appetite good, and the countenance did not betray the least sign of indisposition; but the constant palpitation of the heart, the quickness of the breathing whenever the least exertion was made, and vertigo, were most distressing, and gave the lady apprehensions about herself that others did not feel, but which the sudden result justified.

No. II.—CASE OF CONTRACTION OF THE LEFT AURICULO-VENTRICULAR OPENING.

Anne Conroy, aged 45 years, accompanied by Mr. Michael Moore, one of my class pupils, called at my house in June 1824: this woman had been a cook, and was then in service; she had enjoyed tolerable health until within the last year; she complained now of a sensation of weight in her right side, of palpitation, uneasiness and weakness about her heart, of occasional severe cough, always accompanied by a frothy expectoration. She particularly mentioned that the tone of her voice was constantly varying, sometimes so hoarse she could scarcely be heard, and again it would become shrill; her breathing was perfectly natural while she was speaking to me, but I learned from her that she had occasional paroxysms of dyspnoea, yet with such symptoms she had not the appearance of an invalid in her countenance, except that her complexion had too much of a livid hue. She felt herself capable

of going through her ordinary business; her appetite was good, and she was rather disposed to be fat; her rest at night was perfect; indeed she complained of having an inclination to sleep too much:

The symptoms which most distressed her were palpitation of the heart and vertigo, with which last was generally associated the awful idea that she was about to fall down dead. Upon laying my hand over the precordial region, I discovered that the action of the heart, as to force and frequency, was indeed extraordinary, whilst the pulse, felt at the wrist, was a mere thready stream; unequal and irregular, beating at the rate of 150 in a minute. There was not as yet the slightest disposition to oedema. There was no deformity of the thorax observable.

From the irregularity and want of correspondence between the force of the pulse of the heart, and that of the artery at the wrist, it seemed probable; that these symptoms depended on some organic affection of the valves of the heart, which deranged *mechanically* the circulation of the blood; this suspicion was increased upon considering, that the quickness of the heart's action could not be *sympathetic* with any disease elsewhere in the system, as none such was observable; the prognosis therefore was unfavourable.

I advised her to be bled from the arm; that her

diet should be strictly vegetable ; that she should take the tincture of digitalis in small doses, and above all things give up her laborious occupation. None of these directions was followed : I apprehended, from the severity of the symptoms, that she would be suddenly carried off in an apoplectic fit ; and having announced my opinion to her master, I begged to be informed of it, should such an event occur.

On the second of July, at 4 o'clock in the morning, I was called upon by my pupil Mr. Adam Fuller to visit this poor woman ; she had taken a fit in her sleep. I was surprised on my arrival not to find her in a fit of apoplexy, but seized with a regular epileptic paroxysm. Instead of all or one of her limbs being flaccid and paralyzed, she lay extended in a state of universal convulsion ; her limbs were inflexible ; her countenance was turgid and livid, and she forced a whitish foam from her mouth : her pulse was small, frequent, and irregular ; as to force and frequency it was constantly vacillating.

I hastened to relieve the brain, which I judged to be oppressed, by abstracting about ten ounces of blood. I ordered a purgative and a foetid enema ; but the same continued convulsion did not alter its character for a moment, and she expired at eleven o'clock.

DISSECTION *performed on the third of July.*

In the brain no ruptured vessel was discovered, but the general venous congestion was remarkable. There was a slight opacity of the arachnoid membrane. There was some water in the right side of the chest. The heart was of a peculiar form, owing to the greater capacity of the right side than the left. The pulmonary artery was unusually dilated; the aorta contracted; the left ventricle was diminished in size: the auricle a little dilated; the mitral valve was not half its ordinary depth; its borders were shrivelled and puckered up as if a thread were drawn through them, and contained some spiculæ of bone, it was manifestly incompetent to do more than half guard the aperture of communication between the auricle and ventricle; this aperture was contracted, but was still large enough to admit easily the extremity of the index finger to the first joint, and it must have permitted the blood to pass without much difficulty from the auricle into the ventricle. In consequence of the shortening of the valve, it imperfectly covered the auriculo-ventricular opening, and too readily allowed of a reflux of blood into the left auricle during the contraction of the ventricle; hence the effort of the heart, instead of being as it is in the natural state, expended in propelling onwards the blood through the aorta, was partly lost, because of the imperfect state of the valve admitting a regurgitation of some

of the blood which was destined to pass into the aorta; the heart was therefore obliged to reiterate its beats, to compensate by its quickness for that small quantity of blood it was capable of forwarding at one contraction through the aorta. In this organic change of the valvular apparatus at the left side of the heart, by which a return of blood from the brain and lungs was impeded, we find the source of the quickness of the pulse, the vertigo, the dyspnœa and the sudden termination of these cases. In both we found the mitral valve and auriculo-ventricular opening in a state nearly similar, although the effects of this organic change were so dissimilar, the one having died of apoplexy, the other in an epileptic fit: it would not be easy to assign any reason for these differences, nor to explain why the cases terminated so speedily. They are useful however in showing, that even in the first stage of this disease, life is very insecure, and the dissections present us with what we have not often an opportunity of seeing, namely, the change of the mitral valve which takes place when this disease is in, what may be termed, its first stage.

When the disease is fully established, the signs of the contraction of the left auriculo-ventricular opening are by no means doubtful. The person affected with it has the general symptoms of diseased heart; there are paroxysms of dyspnœa hæmoptysis; much uneasiness also is experienced in lying in any but one position; some-

times the patient can only lie with ease on the right side ; he more commonly prefers the left, but the cause of these varieties I am unable to explain. The palpitations of the heart are irregular, widely extended ; they are seen underneath the lower extremity of the sternum, and the heart beats with considerable force against the side of the chest. As the disease advances, all the above mentioned symptoms are aggravated ; the limbs become anasarcaous, and the abdomen fills with water. Towards the latter period of the disease I have seen jaundice set in, and in so many cases that I cannot look upon it as an accidental circumstance, but rather as a symptom occasionally to be found attending the very last stage of this disease. Strong pulsations are seen in the jugular veins, and there appears a general thrill through the branches of the arterial system as in aneurisms ; when the ear is attentively applied to the side of the thorax, a very complex kind of movement, hard to describe, is heard,—a hissing purring noise as it has been denominated, caused by the transmission of blood through a narrow orifice, is in most cases very evident. The more decided symptoms of this affection are to be found in the peculiar irregularity and want of correspondence in the pulse, as felt at the wrist, and examined simultaneously at the heart ; the latter often beats so violently against the sides of the thorax as to shake the patient in his bed, while at the same time the arterial pulse is small, weak, and irregular ; indeed such is the state of the pulse in the arteries, that the physician attending

to this only, and overlooking the state of the heart, might readily suppose his patient in the last extremity, and dread to have recourse to those remedies from which alone any relief is to be expected.

This irregularity, want of correspondence, and disproportion between the force of the beat of the heart and the pulse as felt at the wrist, are not the only circumstances worthy of our attention ; for such a set of symptoms are common to the contraction of the auriculo-ventricular opening, and the narrowing of the aortic aperture ; but the pathognomonic sign of the former disease will be found in this, that the heart will sometimes give two, three, or even four beats in succession, which are not perceptible to the hand examining the pulse in the arteries ; the pulse at the wrist is very peculiar, and a knowledge of its character will assist us much in forming our diagnosis. I know not how to describe it otherwise than by saying, that it appears to the person examining it as if there were two pulses, one slow and deliberate for two or three beats, which is succeeded by three or four rapid and indistinct pulsations ; the heart upon the whole generally pulsates ten or fifteen times more in a minute than the artery, and its stroke is often more distinct in one arm than another.

The length of time a patient may be afflicted with this disease will be found to be very various ; it is, generally speaking, slow in its pro-

gress, and its severity can be greatly mitigated by proper medical treatment, if the patient can submit to confinement, rest, and a strict vegetable regimen; even after the dropsical symptoms have shewn themselves, he may live for a number of years: it is surprising to what a small fissure the left auriculo-ventricular aperture may be reduced before death supervenes. I may here remark that the dropsy, which, without exception, I have found to attend on the last stage of this disease, seems to me to be much more tractable than the same symptom when it shews itself towards the close of any organic affection of the liver or lungs.

**No. III.—CASE OF CONTRACTION OF THE LEFT
AURICULO-VENTRICULAR APERTURE.**

Three years ago I was consulted by Jane Gibson a poor shop-keeper, living No. 15, Fisher's Lane; she had great difficulty in breathing, and constant palpitation of the heart, head-ache and vertigo; the limbs were anasarcaous and much distended, and the abdomen evidently contained water; there was a deficient secretion of urine; the countenance was natural, except at times when the breathing and palpitation were unusually distressing; there was little or no cough, but the slightest mental agitation or exercise of the body, as that even of walking a few streets, would aggravate all her symptoms; in bed she could only rest upon her right side, and she preserved, most of the day, the sitting posture: this woman had been

for the last year much in this condition, having had, all her life previously, excellent health, nor could she assign any satisfactory cause for the origin of her complaint.

I found, upon exposing her chest, that it was well formed, the action of the heart was rapid, strong, and irregular, while the pulse at the wrist was weak and thready, and although its beat was for the most part synchronous with that of the heart, there were often two, three, or even four pulsations of the heart, at a moment when all pulsation was suspended in the arteries, and could not be felt by the finger placed accurately over the radial artery: the pulse counted here, ranged at the rate of about 120 in a minute, and the beats of the heart, during the same time, exceeded by ten, twelve, or fifteen, that number. I have never seen the pulsations in the jugular veins more evident than in this case, and I ascertained that their beats corresponded accurately with every pulse of the heart, even with those which were not felt in the arteries; moreover when pressure was made on the external jugular veins, two or three inches above the clavicles, the veins became distended beneath this point during their pulsations, even more than when the pressure was omitted.

Having seen such an exact combination of symptoms as this in many cases which terminated fatally, and ascertained by an examination after death that their source was to be found in

the narrowing of the aperture of communication between the left auricle and ventricle, I have little doubt as to the real nature of this case. This woman is still alive, and in conjunction with my friend Dr. M'Donnell, I this day visited her, and found her nearly in a similar state to that I have above related, save that her dropsical symptoms are less pressing, in consequence of her daily use of diuretic medicine. She has been strictly attentive to her regimen, and has confined herself almost exclusively to vegetables. Fortunately it has been her lot to be in a condition of life suitable to her complaint; she has now no anxiety, and her business seldom puts her to the necessity of leaving the sitting posture, the only one in which she can obtain any relief from that source of continual annoyance, the palpitation of the heart, which, whenever it becomes urgent, to use her own words, "takes away her breath." Some time ago, in conjunction with Mr. Wilmot and others, I attended a lady aged 60, who laboured under a similar train of symptoms, in whom also the pulsations in the jugular veins were very remarkable: after a year and a half of severe suffering she died dropsical, and, upon examination of the body, the source of her symptoms was found in the narrowing of the aperture of communication between the left auricle and ventricle, the edges of the mitral valve being puckered up, and a fissure of a semilunar form about half an inch in length, the edges of which were beset with bony specks, being the only space which permitted

the blood to pass from the auricle to the ventricle. The left auricle was largely dilated, while the corresponding ventricle was diminished; the right side of the heart was actively enlarged, or in a state of hypertrophy, and the pulmonary artery and aorta were in size proportioned to the ventricles from which they respectively arose; in short, the heart had acquired the usual form it, after a time, assumes when this organic alteration in the mitral valve has been fully established. I shall not detain the reader by an unnecessary detail of cases of this too common disease, but will content myself with mentioning one out of a great many which I have met with.

NO. IV. CONTRACTION OF THE LEFT AURICULO-VENTRICULAR OPENING.

Dr. William Hamilton, now Surgeon of the Wicklow Infirmary, attended with me a youth aged 15 years. He was, we were informed, delicate from his infancy, liable to breathlessness, cough, and palpitation of the heart, from the slightest causes. He was incapable of engaging in the amusements natural to children of his age; his symptoms, however, never confined him wholly to the house, until within the last year of his life. His urine became scanty and high coloured; all his symptoms grew worse, his limbs became anasarcaous, and he was visited, every evening, with a paroxysm of difficult breathing.

When I saw him, which was about six weeks before his death, I found him in the following state: his countenance shewed the distress and difficulty of breathing under which he laboured; his eyelids were swollen with a watery effusion; his inferior limbs were anasarcaous: there was an unusual prominence of the left side of the sternum to be observed: the pulsations of the heart extended themselves widely over the thorax, and at a distance could be heard beating with considerable force against his breast. That this organ performed some kind of complex double movement, and that its motions were accompanied with a purring sound, as in varicose aneurisms, was plainly audible, and could be also recognized when the hand was placed over the region of the heart; the pulse at the wrist was very weak and irregular, sometimes very obscure, and always manifestly disproportioned to the powerful action of the heart. There was often a double pulse at the heart for the single beat in the arteries; pulsations were also seen in the veins of the neck. Upon a careful consideration of all the symptoms, I concluded that the contraction of the left auriculo-ventricular aperture, if not congenital in this case, had been for a long time completely established; the prognosis given was unfavourable; all that remained to be done was to palliate symptoms as they occurred. The dropsical swellings were often evacuated by the administration of diuretic medicines, and the breathlessness was as repeat-

edly relieved by venesection. But these palliatives, after a time, ceased to be of use: the effusion became general, and the dyspnoea which used to occur in paroxysms only, now became habitual: he was incapable of assuming an horizontal posture. From this miserable state he was relieved on the 12th July 1824. He suddenly became jaundiced; in three days afterwards he died in a sub-apoplectic state.

DISSECTION.

Assisted by my friend Dr. Hamilton, I examined the body 24 hours after death. The whole surface was of a deep yellow colour; limbs œdematous; the abdominal organs were sound; the liver was of a livid colour, greatly gorged with blood, yet its ducts were pervious, and there was an abundant quantity of bile in the intestines; the lungs were perfectly sound; there was about a pint of yellow serum in the cavity of each pleura; the cartilages of the ribs, cellular membrane, in fact, every tissue were dyed yellow; the pericardium contained a small quantity of serum, there was no adhesion of this membrane to the organ.

The heart presented an unnatural appearance, yet had a form similar to what I have in other instances observed impressed on it, in consequence of a permanent contraction of the left auriculo-ventricular aperture; the auricles were

greatly dilated ; the right ventricle seemed unusually convex and enlarged, it having equally contributed with the left, as in the fœtus, to form the apex of the heart : the latter was rounded off in this direction, and the whole organ presented more of a circular or oval form than it naturally does. The increased capaciousness of the right side over the left was so remarkable, that the latter was entirely concealed behind the former.

The right ventricle in fact presented much the appearance which the left does when enlarged, so rounded and convex did it appear. This no doubt was partly owing to a great accumulation of blood in its cavity ; but in part it arose from a dilatation and increase of substance of the parietes of this side of the heart.

The left ventricle, as it was so much diminished, was not near so long as the right, which terminated in a rounded pouch-like extremity, not at all resembling the natural apex of the heart, which in a well formed adult heart, the left ventricle chiefly constitutes. The two large arteries were in exact proportion to the ventricles from which they respectively arose. The pulmonary trunk was dilated nearly to twice its natural size ; the aorta was diminished to about half its ordinary calibre. In the interior of the organ nothing was remarkable at the right side but an unusual prominence of the *carneæ columnæ* ; the valves here were all perfectly sound.

The left auricle was largely dilated, and contained a quantity of grumous blood: the left ventricle was of its natural thickness, but shortened and diminished a little in capacity. The communication between these was greatly interrupted, not by any contraction resulting from bony depositions, or by narrowing from any cause commencing in the zona annularis of the ventricle; but it appeared as if the contiguous edges of the left auriculo-ventricular valves had, as it were, coalesced (or had never been separated); and thus was formed a transverse septum, constituting at once a floor to the auricle, and roof to the ventricle,—concave towards the former, convex towards the latter; perforated by an oblong opening, bearing in its appearance some resemblance to the rima of the larynx. There was not to be discovered in the valves a speck of bony or earthy deposition. A few yellow cartilaginous excrescences, preparatory to such a state, alone occupied the broadest extremity of the narrow opening.

As the appearances which the heart in the dissection of the foregoing case exhibited, resembled so much what I have observed to be constantly the state of the organ in those who have died in the advanced stage of this disease, I have but very few additional observations to make upon this subject. The appearance however of the contracted opening of communication between the left auricle and ventricle deserves a moment's

attention as in this organic change, I believe, is to be found the immediate mechanical cause of the new form which the heart acquires, and of all the symptoms which characterise this peculiar affection. When the dilated auricle is cut into and cleared of the blood it contains, at its lowest part, instead of the mitral valve, a concave membranous septum of a yellow colour is seen, which is perforated by an oblong fissure, about half an inch in length, and one or two lines broad ; this fissure I have observed to be always obliquely situated, and to run parallel to the septum of the ventricles ; it generally is of a semilunar form, the concavity of the curve looking towards the root of the aorta, the convexity backwards ; the first formed by the larger portion of the mitral valve, the latter by the smaller ; the edges of this oblong fissure are generally studded with bony depositions ; viewed from the left ventricle the membranous septum is convex, and the angles of the fissure are connected by shortened chordæ tendineæ, with two very thick fleshy columns, the one in front, the other behind ; this I think it necessary to mention, as, from the enlargement of these carneæ columnæ, it is manifest that they must have had to exert some inordinate effort to make the imperfect valve capable of acting its very important part in the mechanism of the circulation.

The cavities of the heart I have in general found filled with coagulated blood, which in some

cases I have seen assume the appearance of the polypi-form concretions, which so much attracted the attention of the older pathologists : most of these coagula had the appearance of recent formation, but my friend Mr. Mc Dowell last winter found in the left auricle of a subject who died of the disease we are now considering, a ball as large as a pigeon's egg ; it was formed of the fibrine of the blood, was very firm in its consistence, and of a figure perfectly spherical, except that there was an oblong depression on it, which corresponded accurately to the form of the edges of the fissure by which the left auricle and ventricle communicated ; small fossæ also, which must have been produced by the frequent contact of the bony spiculæ, were seen upon its surface ; from all which it was manifest it could not have been of recent formation : we examined this curious specimen of polypi-form concretion too accurately to be deceived upon these points, and this, and the heart in which it was found we have preserved. Although the history of this case was not entirely unknown, nothing sufficiently precise could be elicited to authorise me in giving a summary of the symptoms, the prognosis formed, or the treatment which was adopted. This example of contraction of the left auriculo-ventricular opening serves to shew what struggles the heart will make, under the most unfavourable circumstances, to support life.

Let us now consider how far the new form the

heart has acquired will enable us to account for the peculiar symptoms which attend this disease ; among the most remarkable is, first, the want of correspondence between the force of the heart and strength of the arterial pulse ; secondly, the irregularity of the latter, and occasional double beat of the heart for the single pulsation in the artery.

First, when we recollect that the right ventricle is actively enlarged, and at the same time pushed forwards towards the sternum by the dilated auricles above and behind it, and moreover, that these three cavities just mentioned have a resistance to overcome at the left auriculo-ventricular aperture, we have no reason to be surprized at the vigorous pulse of the heart, to which the diminished left ventricle can contribute but little, as it is placed so much behind its usual situation : secondly, the pulse in the arteries is small, weak, and irregular, and less frequent than that of the heart, because the pulse of the former is the indication of the state of the left ventricle, which, as has been already mentioned, is reduced in size. and we can account for the irregularity of the pulse in the arteries when we bring to mind that the left ventricle derives from the auricle above it a very precarious supply of blood, which is probably often inadequate to fill its cavity ; under such circumstances, the left ventricle may contract in unison with the right, but the stream it has to transmit will not be sufficient to distend the

arteries, or make their pulsations sensible ; at such a moment there is a total failure of the arterial pulse, while that of the heart (caused by the action of the right ventricle) is strong and vigorous, hence the phenomenon characteristic of this disease, the occasional double pulse of the heart for the single pulse in the arteries.

This opinion is, I am aware at variance with that which refers the double pulse to the contraction, first, of the auricle, and next of the ventricle ; but as far as I have seen, the double pulse never occurs with the regularity which such an explanation would suppose ; besides, it has always appeared to me difficult to conceive how the pulsations of the left auricle could be felt by the hand placed on the breast, as that cavity is situated so close to the spine, and so far from the surface.

Lastly, the pulsations seen in the jugular veins demand our consideration : the cause of this symptom has been much disputed ; to me it appears most probable that it results from the regurgitation of blood from the right ventricle into the auricle, by which the current descending from the jugular veins is repelled back into these vessels during the systole of the ventricle. The pulsations in the jugular veins I have always observed to be synchronous with the action of the heart, even with the pulsations which were not perceptible in the arteries.

Mr. Hunter, in his *Treatise on the Blood*, has remarked that the valves of the right side of the heart did not so completely close the arterial and auricular openings as those of the left; but this circumstance, in my opinion, has not been sufficiently noticed, nor the influence that such a structure may have on the circulation in its natural or morbid state considered. I look upon this difference in the valves of the right and left side of the heart to be a natural provision to allow of a partial reflux into the right auricle, on those occasions when from any cause the passage of the blood through the arterial opening is retarded. Such a provision was absolutely necessary in the right or pulmonary ventricle, as various natural causes must momentarily retard the passage of blood through the lungs.—Let us suppose the right ventricle to contract vigorously at such a crisis.—Some part of the valvular apparatus (which is not very strong at this side) or the ventricle itself might give way, were there not some other course for the blood than through the pulmonary artery: in the natural state of the heart it is probable that there is constantly some little reflux into the right auricle during the contraction of its corresponding ventricle, as the valves readily admit it, but the great swelling of the jugular veins is only seen when extraordinary efforts are made, or when, from any enlargement of the right side of the heart, it is capable of containing a larger quantity of blood than it can readily transmit through the lungs, or the left receive;

on these occasions it is that the pulsations in the jugular veins become evident ; they are synchronous with the action of the heart, and can more readily take place when the right ventricle has been preternaturally dilated, as it is not likely that the valve will increase in size and breadth in proportion as the auriculo-ventricular aperture enlarges.

Upon the whole, therefore, I would conclude that the pulsations in the jugular veins, viewed as a symptom of the disease we have been just considering, depend upon this, that the right ventricle, unable to transmit all the blood which distends it, through the pulmonary artery, part of it must regurgitate towards the auricle and displace a column of blood descending into this cavity from the jugular veins, causing thus a momentary reflux or pulse in the veins nearest the right auricle. Such observations, however, are not meant to apply to, or explain venous pulsations in general, but merely comprehend those which I have witnessed in cases where the left auriculo-ventricular aperture was contracted. In all cases, however, in which evident pulsations are seen in distant branches of the venous system, I think it would be highly satisfactory that the relative proportion between the auriculo-ventricular aperture and the valve designed to cover it, should be accurately examined when opportunities occur of inspecting the bodies after death, and that more than ordinary care

should be taken to discover whether any permanent obstruction had existed in any portion of the pulmonary circulation.

Before I conclude these observations on the healthy and deranged action of the auriculo-ventricular valves, I may remark that the mitral valve so perfectly closes the aperture of communication between the left auricle and ventricle, that, in the natural state, no reflux whatever is admitted; this, so useful at the right side of the heart, would have been not only useless, but injurious at the left side of the organ, as we find the general arterial system at all times equally ready to receive the blood during the systole of the left ventricle; and if the mitral valve did not perfectly close the left auriculo-ventricular aperture, a great deal of the force of the aortic ventricle would be wasted, whereby it would be incapable of moving the mass of blood which was destined to fill the arterial system. Pathologists, in looking to the different nature of the lining membrane at the two sides of the heart, as a means of explaining the greater liability of the left side to disease, have perhaps too much overlooked this circumstance, that while, from the unyielding nature of the mitral valve, all reflux into the auricle is prevented, from this very cause, which renders it effective in the circulation, is it exposed to more frequent injury from which organic disease may arise and the ventricle to which it belongs become more liable to be ruptured by its own efforts.

However we attempt to account for it, the fact is undeniable that rupture of the right side of the heart, and injuries and diseases of the tricuspidal valve are as rarely as such accidents and lesions of the left side of the organ are frequently to be met with. I shall conclude the observations I had to make on the morbid contraction of the left auriculo-ventricular opening, by considering how far this obstruction in the heart can account for some of the other symptoms of that disease.

The brain, the lungs, and the liver, more or less, feel the injurious effects of this obstruction to the free circulation of the blood through the left side of the heart; the former is oppressed by an undue quantity of blood, the quality of which is ill suited to the function of the organ; hence the vertigo, and sometimes the sudden termination by apoplexy or epilepsy already alluded to. The lungs and the liver are better able to accommodate themselves to this local plethora, but their functions are more or less disturbed. Hence the dyspnœa, hæmoptysis, deranged digestion and jaundice, which I have remarked in many instances. Lastly, the general capillary system suffers from a double cause; the circulation of blood through these vessels must be languid, because the impulse *a tergo* which they can derive only from the left ventricle is weak, while there are numerous obstructions in front, but all arising from the one cause, namely, the con-

traction of the left auriculo-ventricular aperture. These vessels are probably relieved of their plethora through the exhalants, which open on the cellular membrane and serous surfaces, hence the anasarca first, the ascites and hydrothorax last, the constant attendants on the final stages of this disease.

ON OSSIFICATION OF THE AORTIC VALVES, AND
CONTRACTION OF THE ARTERIAL OPENING OF
THE LEFT VENTRICLE.

There appears to be no disease of the heart or its vessels more generally to be met with than ossification of the valves of the aorta; this organic alteration is the cause of an obstruction to the free passage of blood through the arterial opening of the left ventricle, from whence, in most cases, remarkable symptoms arise. Some writers consider this change of structure to be so common in the old subject, that they look upon it less as a disease than as the natural consequence of age. When an ossified condition of the aortic valves occurs gradually at an advanced period of life, it is wonderful what little disturbance in the system at large is produced; when on the contrary it appears in the young, which is not very common, or about the middle period of life, it is in such patients attended with well marked symptoms. There are strong palpitations of the heart, and dyspnoea complained of, which are much increased by the slightest exertion; in a word, the

ordinary signs of active enlargement of the left ventricle are present, except that the force of the arterial pulse is not proportioned to the action of the heart. It is irregular, and its contractions are accompanied with an hissing or purring sound, which can be clearly heard when the ear is applied to the side of the thorax, and a peculiar thrill is felt as in varicose aneurism, when the hand is laid on the præcordial region. With such a combination of symptoms this disease may be readily confounded with that which consists in a contraction of the left auriculo-ventricular opening, which we have just been considering: it is said, however, that the diagnosis will be found in this circumstance, that in the latter disease there is generally a double pulse to be felt at the heart for the single pulsation in the artery.

In the cases I have witnessed, in which calcareous depositions were discovered after death in the aortic valves, there had never been venous pulsation observed. The pulse had been weak and intermittent, but it presented neither the quickness nor peculiar irregularity which was constantly remarked in those cases in which, on dissection, the mitral valve was discovered to have been the seat of the organic change before described. When the heart has been examined in those who have died of the disease, which consists in a contraction of the arterial opening of the left ventricle, this cavity has been found to be actively

enlarged, or in a state of hypertrophy, and to exceed in length the neighbouring ventricle, so that the whole organ seemed elongated, and the apex formed exclusively by the left ventricle was remarkably pointed, and of a contorted form, which is strongly contrasted with the shape the heart after a time acquires in consequence of a contraction having existed at the left auriculo-ventricular opening.

Such are the symptoms which generally attend a contraction of the aortal opening of the left ventricle, and the appearances which I have observed the heart to present in those who have died of this organic affection. The Profession is already acquainted with the ordinary forms of this disease, which it therefore becomes unnecessary to exemplify by cases ; but I believe the following instance of ossification of the aortic valves and coronary arteries was attended with some remarkable peculiarities which render it worth noticing.

CASE OF COMPLETE OSSIFICATION OF THE CORONARY ARTERIES OF THE HEART AND OF THE AORTIC VALVES.

A gentleman, ætat. 68, of a pallid countenance, yet full and corpulent, while exerting himself in arranging some books on a high shelf in a library, suddenly felt severe pain in his chest, extending down his right arm, accompanied by a sensation of numbness : his sight became dim, he had

vertigo, but did not fall. From that moment his breathing became oppressed, and in a little time he discovered that his pulse, which was unaccountably weak in his left arm, was altogether imperceptible in the right.

On the following day, the 18th of October, he had still further grounds for alarm; the most careful examination could not detect the least pulsation in any artery in the body; nor was the movement of the heart sensible to the hand laid over the breast; an obscure undulating motion could alone be heard when the ear was for some moments attentively applied to the side of the thorax.

His breathing was high and laborious, and could only be performed when the body was nearly erect, inclined a little backward or forward. At night he became worse, and enjoyed no sleep: he occasionally turned on his side with a wish to rest, but this posture encreased the dyspnoea, and could be preserved only for a few moments.

Although this gentleman was perfectly aware of the alarming nature of his symptoms, being himself a physician, he was cheerful, and his countenance was but little disturbed. His appetite was not good; but he was able to eat some chicken or fish for his dinner daily. His digestive organs performed their functions but imperfectly; he suffered great distress from flatulence: thus he re-

mained for six weeks, with little alteration in his symptoms, except that his strength was observed declining daily and his breathing becoming more difficult : his rest during the night was still more imperfect : during the entire of this distressing period, *no pulse was to be felt in any artery in the body* : although I daily made the most careful examination, it was in vain. It would be useless to particularize the various remedies which were ordered from day to day ; enough to mention generally, that to procure rest, the compound powder of ipecacuan, lactucarium, and laudanum, were prescribed successively, but with little advantage. The flatulence and derangement of the digestive organs partially yielded to warm cathartic medicines. Purgative and foetid enemata were exhibited every evening. Æther, and repeated blisters, were fruitlessly prescribed to relieve the distressing dyspnœa : venesection was not resorted to.

This gentleman had been fond of society, and lived too fully, however in the previous history of his health, but little presented itself to throw light on his present situation.

Although always an inhabitant of the City, his chest never shewed any delicacy until within the six weeks previous to his sudden illness, when he had a troublesome cough, which yielded to a change of regimen, blistering, and one small bleeding. It was learned however, that three or four

times, within the last ten years of his life, he had suddenly fallen to the ground in the most unaccountable manner, without getting notice by any previous sensation, or losing consciousness, except for the few moments while the syncope lasted, nor did he experience any unpleasant effect from it. When raised from the ground he felt quite as well as if nothing had happened. In the sudden and unexpected manner in which this syncope occurred, and went off again, it was altogether unlike a common faint.

From all that could be learned, it was plain that to some organic disease of the heart could alone be attributed the remarkable symptoms observed in this case ; but the nature of the lesion was altogether concealed. It appeared however too certain that medicine would prove totally unavailing to relieve him. After having laboured under the symptoms already detailed for seven weeks, this gentleman, on the morning of the 6th of December, having passed the previous night wretchedly, was observed, for the first time, to wander a little in his mind : he then fell into a state of stupor, his upper lip became suddenly swollen, and a large livid spot appeared on it. His breathing at first became hurried, then irregular, and finally at 12 o'clock ceased altogether. He expired without appearing to suffer any pain.

DISSECTION.

The Body was examined the following day.

There was slight œdema of the lower limbs. The abdomen was much distended with air, and contained a small quantity of serum.

There were adhesions of the right lung to the side of the thorax ; on separating these, a cavity was discovered containing about a pint of a yellow sero-purulent fluid. This cavity was lined by a membrane of organized lymph, evidently of recent formation. The substance of this lung exhibited in no part any traces of inflammation. The left lung was not adherent ; it was perfectly healthy ; yet a small quantity of serum was contained in the left cavity.

The heart was large, flabby, and of a yellow colour from fatty deposition : all its cavities were distended with fluid blood ; the semilunar valves of the aorta were completely ossified ; but this bony or earthy deposition was not confined to the aorta ; it extended to the coronary arteries, which were so completely converted into bone as to be quite solid, having no perceptible cavity except at the distance of an inch from their origin : beyond this these vessels were at intervals completely interrupted by small bony specks.

Most of those who were present at this dissec-

tion went away dissatisfied, as the mystery did not appear explained,—why for so long a period no pulse could be perceived in the arteries. Some expressed their conviction that the contraction, the result of ossification of the aortal orifice of the ventricle, was sufficient to interrupt the stream of blood, so as to render the effect of the systole of the heart imperceptible in the arteries. But such an explanation was in my mind unsatisfactory, as the usual signs of this very common disease were not observed during the life of this individual; nor were the changes in the form of the heart, which it very generally induces, remarked after death. In those cases I have witnessed, when the aortic orifice of the ventricle was narrowed by the slow deposition of bone, the heart struggling to overcome the resistance, palpitated violently against the side of the chest; whilst the radial pulse, though small and weak, was always perceptible. But in the case I have just related, no pulse whatever was to be felt in the arteries, and the action of the heart was so weak and indistinct, that it could not be felt by the hand placed on the breast; indeed it was doubtful to many whether its motions could be perceived by the ear attentively applied to the side of the thorax. The very unusual symptoms observed in this case do not admit of so very simple an explanation, as I believe there is no pathological state more common than ossification of the aortic valves; while I know of no case recorded in which there was such an unaccount-

able absence of all pulse in the arteries remarked for so long a period. I have repeatedly observed such state of the valves after death in those in whom, during life, the pulse might have been irregular in every respect, but still always perceptible.

I have already adduced a case, page 396, in which, on dissection, the semilunar valves of the aorta were found in such a state from bony deposition, that water poured from the ventricle or through the aorta was equally retained by the valves. Yet the force of the heart, much debilitated by disease, was sufficient to open these valves at each systole; and although a slow and slender stream was thus circulated, the pulse both at the heart and arteries was always sufficiently distinct.

Such considerations induced me at once to dissent from the opinion that the unusual symptoms which this case presented depended altogether upon a contraction of the aortic orifice of the ventricle.

While the symptoms were so peculiar during life, in the dissection I could observe nothing very unusual, except the total obstruction of both coronary vessels. I have often seen a portion of the root of the aorta, including the semilunar valves, nearly converted into bone, while the ori-

fice and continued trunk of these vessels were perfectly natural ; but I have never witnessed an ossification of the coronary arteries so complete or extensive as in this instance. Such a fact was naturally calculated to make an impression on my mind seeking for some elucidation of the question ; but it has only suggested the hypothesis difficult to be sustained, that the heart, directly deprived of its due supply of blood by the obliteration of its proper nutrient vessels, might have been suddenly thrown into a state of partial paralysis ; hence the feebleness of its efforts, which were inadequate to excite the slightest movement in the arteries. This hypothesis may derive some little support from the consideration, that if the natural supply of blood be entirely cut off from a muscular organ, paralysis will as speedily and certainly follow as if all communication with the brain were interrupted by a division or injury of all the nerves which supply it.

Thus, for instance, let us tie the aorta, or inflict an injury on the spinal marrow of an animal, immediate paralysis of the inferior limbs will as certainly follow the first, as the second experiment. When we reflect that the heart can derive no supply from any other source than its coronary vessels, it will not appear then so extraordinary that partial paralysis should be the immediate consequence of the complete obstruction of these channels upon which the heart is evidently so dependent. The paralysis, if we dare so deno-

minate it, was not in this instance, and indeed seldom is in any case, so complete as to deprive the muscular organ of all power of motion. The heart was still just capable of contracting, and thus passing onwards the blood it received, but so feeble was its impulse, that the slightest motion was not perceptible in any branch of the arterial system.

The syncope which occurs in angina pectoris (an irregular form of which this case is to be considered) I am aware has been ascribed to a temporary spasm of the organ ; a state exactly opposed to the paralytic condition into which I have imagined the heart to be thrown in consequence of its coronary vessels refusing to transmit to the heart its proper nutrient fluid. But the length of time during which the heart was apparently at rest in this case, precludes the idea of spasm ; indeed it evidently supposes a condition exactly the reverse of it. It should be recollected however that these opposite conditions of convulsion and paralysis are occasionally associated in disease in a manner we are totally unable to account for, and sometimes the one, though more frequently the other, is produced by causes which, were we not to judge by their effects, we might suppose similar. But while I would suggest that the total failure of the pulse in this instance might have resulted from the defective nutrition and paralysis of the heart, I am not at the same time disinclined to admit that the state of

the semilunar valves of the aorta, *in combination* with the ossified condition of the coronary vessels, might have greatly contributed to impede the circulation or rather suppress the pulse; indeed it is evident that there must have been something mechanical in the cause which thus impeded the action of the heart. Its weakness was not sympathetic, for there was in this case, at first, no symptom of pyrexia. The spirits were cheerful, the appetite good, and debility was not complained of until this gentleman was beginning to feel the consequences of the distressing dyspnoea which affected him. The disease at first appeared evidently local, but the suddenness of the cessation of the pulse precludes the possibility of our accounting for it on* mechanical principles. Pathological anatomy has indeed informed us that a certain condition of the heart and its coronary arteries is generally found in those who die of angina pectoris (an irregular form of which this case is to be considered) but it cannot explain to us the *modus operandi* of such organic causes in producing those symptoms or external signs by which that disease is recognized. Thus, although we can have but little doubt that in the case we have been just considering the organic seat of the gentleman's com-

* Dr. Cheyne informs me that he knows two individuals still living in whom for two days there was a failure of the pulse; in one which occurred during an attack of misplaced gout, it was complete; in the other, after an attack of cholera, a faint pulsation could be discovered about four or five times in the minute.

plaint was to be found in an ossified condition of the coronary arteries of the heart and aortic valves, we are not by such a consideration furnished with any certain means of knowing why the pulse suddenly ceased in every artery in the body at a time when the general health seemed unimpaired.

OBSERVATIONS
UPON THE
ORIGIN AND LATENT PERIOD
OF
F E V E R,

BY
HENRY MARSH, A. B. M. D. M. R. I. A.

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THE PRACTICE OF MEDICINE AT THE MEDICO-CHIRUR-
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&c. &c.**

IN this paper it is proposed to consider, First, the manner in which febrile disease is produced ; Secondly, the symptoms which manifest themselves during the latent period ; Thirdly, the treatment adapted to this stage of disease. The consideration of the manner in which fever is excited in the living body, has given rise to much controversy ; the diversity of opinion, which prevails on this subject, is a sufficient proof that it has not hitherto been successfully investigated, and that it still remains involved in considerable obscurity—

an obscurity which reasoning alone will not dispel. Here, as every where throughout the wide range of the science of nature—Nature herself must be interrogated; and to obtain a correct knowledge of her operations, we must engage in the laborious task of observing minutely, and of faithfully recording her own proceedings. We must patiently collect, compare, and combine the numerous phenomena with which accurate observation will not fail to furnish us. This method of investigation alone will lead to useful and practical results, and had it been heretofore adopted, one source of febrile disease, Contagion,* had not remained as it now is, a subject matter of keen dispute and intemperate controversy. Not only would the question respecting its existence have been long since finally determined, but many of the laws which regulate its actions would have been, ere this, fully established. The knowledge thus acquired would have been certain, because derived

* In this paper the words Contagion and Infection are used synonymously; no animal poison can produce its specific effects, unless it come into contact with the body upon which it acts. Some animal poisons, as the syphilitic, assume a palpable form, and are cognisable by the senses; others as the febrile effluvia, are volatile and impalpable; others again, as the variolous, assume both forms. But whether a poison be palpable or volatile, it must, to produce its effects, be applied to the living body. The term Inoculation is referable to a poison cognisable by the senses, applied to an abraded or mucous surface; the words Contagion and Infection, to a volatile poison, whose invisible particles, mixed with the air, are, during the act of inspiration, brought into contact with the mucous surface of the nose, fauces, or air tubes.

from unquestionable facts, and founded exclusively upon repeated observation. Such has been the method, according to which I have attempted to investigate this intricate and important subject; the observations which have been made, and the authentic facts which have been collected, I shall now proceed, in the order of the time of their occurrence, to lay before the reader. The first case which I record was mentioned incidentally to me; it strongly arrested my attention, and induced me to search farther, and endeavour if possible to ascertain, by an appeal to facts, the circumstances connected with the origin of fever.

1. A female named Doolan, aged 24 years, admitted into one of Dr. Crampton's fever wards in the Whitworth Hospital, on the 24th of November 1817, gave the following account of the manner in which she had taken fever. The statement came from her voluntarily, and not in reply to any question put to her; and appeared to be the result of a strong mental impression which she seemed anxious to communicate. On the Wednesday preceding the day of her admission a person not yet recovered from fever came into the house where she then was, and sat down close beside her. She became immediately sensible of a heavy disagreeable odour arising from the person of this individual, which disgusted her exceedingly; she was instantly affected with headache, and became so weak that with difficulty she could move her limbs or stand. That very evening long con

tinued rigors came on, followed by heat, to which succeeded perspiration; she spent a restless night, slept in an agitated manner, and awoke unrefreshed. She was admitted into the hospital, labouring under the ordinary symptoms of fever in an intense degree; she complained of severe headache, great prostration of strength, and was covered with large and florid petechiæ: her fever was tedious, and her recovery slow.

2. On Wednesday, the 17th of June, 1818, Nurse Smyth, in one of the wards of the Richmond Penitentiary, administered an enema to a patient labouring under typhous fever; while she was engaged in this duty, the bowels of the patient were suddenly evacuated; the smell issuing from the feces produced immediate and most intense headache, and her strength at the same time was so completely exhausted, that she had neither power to move nor to support herself on her limbs. In a few hours afterwards she was seized with a severe rigor; but being placed close to a large fire she became warm, yet not without occasional sensations of chillness; feeling as if some cold substance moved slowly along her back. Typhous fever, of a severe character, yet presenting no unusual symptoms, supervened. The patient to whom the enema had been administered died in two days afterwards, having exhibited the worst characters of petechial fever.

3. On the 25th of June, 1818, Nurse Hayes, labouring at the time under a slight catarrhal affection, applied leeches to a person in the last stage of typhus, whose body was covered with purple petechiæ. While she was leaning closely over the patient, in the execution of this duty, he coughed, and the smell of his breath greatly disgusted her. Shortly afterwards she had a rigor, and felt as if cold water descended along the spine. For several hours subsequently there was an alternation of heat and chillness. She took an antimonial emetic, and perspired copiously: the fever which ensued, was mild.

4. On the 22d of July, Nurse M'Keon was employed at an early hour of the morning in washing sheets just removed from the bed of an old woman labouring under typhous fever. The skin of this patient was strewed with dark petechiæ; her tongue black and dry; she lay on her back in a state of complete insensibility; she had low muttering delirium; the excretions were passed involuntarily; her skin was cool and her pulse slow. The smell issuing from the sheets affected the nurse powerfully and disagreeably; she was instantly seized with headache and great weakness. Sometime afterwards she felt cold, and trembled for several hours. When I saw her she complained of headache, nausea, and prostration of strength; her skin was hot, her pulse frequent and full. She was moderately bled from the arm; leeches were applied to the temples, and she

was freely purged. Her fever subsided on the fifth day.

5. A young gentleman was led, by motives of humanity, to visit some poor people who lived in a wretched room, in one of the narrow and filthy lanes of this city. There happened to be, at the time, two cases of bad fever in this small and ill-ventilated apartment. On opening the door the smell immediately sickened him. He returned home unwell, and spent an agitated and restless night. I met him on the next day accidentally in the street, and was at once struck with the remarkable change in the expression of his countenance. He was pale ; his skin had a dingy dirty appearance, there was a livid circle beneath his eyes ; and he complained of great languor and debility. In the evening of that day I visited him. I found him in bed, his eyes were deeply suffused ; his cheeks much flushed ; his skin intensely hot ; mouth parched ; tongue loaded ; pulse 120, full and resisting ; his breathing hurried and anxious, with frequent sighing. I immediately opened the temporal artery ; and placing him in the erect position, allowed the blood to flow in quantity about 24 ounces, until the colour fled from his cheek and lips. He felt very much relieved : and though he spent the night in a restless manner, with delirium, yet he awoke on the following day quite free from fever, complaining only of weakness.

6. Nurse Rainbow, while occupied about the person of a patient labouring under petechial fever, (who died two days afterwards) was struck with a heavy smell, which affected her disagreeably, producing pain in the head. The headache, accompanied with languor, continued several days afterwards. She resisted the disease as long as she was able; but was at length obliged to abandon her occupation and remain in bed. During the whole time of her protracted fever, her continual complaint was of intense headache and precordial oppression. Her convalescence was tedious, and for weeks afterwards a sensation of weight and oppression at the cardiac region did not forsake her.

7. The Rev. Joseph Fletcher, on Sunday, the 20th of September, 1818, having enjoyed during the morning his usual health, and having performed the customary church service of the day, visited, before dinner, a small hospital, established for the reception of fever cases, which occurred among the parochial poor. While speaking to a woman, recovered from fever, he found himself standing on straw, just removed from the bed of a fever patient, in which there was much feculent matter. The odour from thence struck him with force. He immediately felt pain in the head, and sickness of the stomach; and such was the debility instantaneously produced, that he found himself unable to stand, and was obliged to support himself against an adjoining gate-post. That very evening

he had a rigor ; a fever of unusual severity ensued ; and his medical attendants entertained little hopes of his recovery. During three days of the fever the pupils were permanently dilated, and he lay in a state of total insensibility.

8. Dr. Crawford, one of my fellow-labourers at the hospitals of the House of Industry, during the prevalence of the epidemic fever of 1817 and 1818, gives, in his Thesis, the following account of the manner in which he himself became affected with fever :—" On entering a ward very early in the morning, where lay a woman labouring under the worst description of fever, as I approached the bed, I perceived a disagreeable fœtor, and was instantaneously struck with headache and nausea. In two days afterwards I was seized with a fever of the same character."

9. Within a few hours after Dr. James Clarke had visited a bad case of typhus, which terminated fatally, he met Dr. Cleghorn in the street and said, I have got a *fugh** to day at the hospital, which I cannot get rid of. He dined at Dr. Ferguson's and ate heartily. In the evening, not finding himself quite well, he took six grains of calomel. On the next day he sat down to dinner at his father's, but could eat nothing. His father advised him to go to bed and take some medicine.

* This word in Scotland means a heavy disagreeable smell.

This was on Sunday. On Monday Dr. Cleghorn saw him again ; when he expressed his extreme sense of weakness by saying, that his legs were completely knocked from under him and his strength entirely gone. On the eleventh day of the fever he died.

10. Dr. Waring, on visiting a patient labouring under typhous fever, found the room so close that he instantly broke a pane of glass in the window. On his return home, he told Mrs. Waring that he had got a knock on the head, which all the college of physicians could not cure. Dr. Cleghorn saw him on the next day, when he repeated to him the same words. He had been engaged in lecturing for Dr. Cleghorn during the preceding days ; and had very much overworked himself. The fever, thus produced, was fatal.

11. On the 13th of August, 1822, Dr. Parkinson, at the time rather weak and delicate and affected with a slight bowel complaint, visited a person labouring under fever, who resided in a small low apartment, wholly destitute of ventilation. While Dr. Parkinson stood close to the bed the patient suddenly sat up. Having perceived a most disagreeable smell, he observed at the instant that he had caught the infection. He rushed to the window and forced out a pane of glass. During the next day he made no complaint, but appeared dull and out of spirits ; was flushed, and said, that he felt very cold. At night he became hot and

restless. On the next day (10th) the pain in his head was so severe, that he could not leave his bed. On the 16th he was rather better—he had been relieved by medicine—the headache had abated, and he was able to leave his room. On the night of the same day (16th) the headache returned with excessive violence; and on the 20th he died.

12. *From Barker and Cheyne's Report, Vol. I. page 472.* “A child, on being discharged from a fever hospital, was admitted into a charitable institution, and brought with her a small bundle of clothes which had not been disinfected. The bundle was opened by a woman resident in the institution, who perceived an exceedingly disagreeable odour to issue from it. In a few minutes the woman became ill and her stomach sickened; which proved the beginning of a fever such as was prevalent. Hers was the first case of the epidemic in the institution.”

13. The next fact I shall relate occurred in my own person. On Friday the 4th February, 1825. I felt myself in as good health and spirits as I had ever enjoyed. At an early hour on Saturday morning, I took a scanty and hurried breakfast. The business of the day was laborious and fatiguing. At six o'clock, greatly exhausted by exertion and weak with hunger, I arrived at the hospital; and having visited the chronic wards, and one of the medical pupils, then labouring

under fever, I entered the fever ward, and incautiously turned down the bed clothes of one of the patients for the purpose of making some necessary observations. The patient had laboured during many days under the severest form of typhus. Immediately on turning down the bed clothes, I perceived a highly disagreeable odour: and felt myself oppressed and at once overwhelmed. I hastened home, not feeling well, ate a hearty dinner, and made a considerable exertion to go out in the evening. I felt myself however so chilly, that I covered myself with all the coats and cloaks I could procure: but every attempt to excite a sensation of warmth was fruitless; even whilst close to the fire, and wrapped in large cloaks, I still felt chilly and cold. On Saturday night the pediluvium promoted free perspiration, and purgative medicine operated well. On Sunday, unable to rise; on Monday, went out in a carriage perspiring, yet chilly; severe headache, aggravated by the least exertion; expression of countenance remarkably altered. The leading symptoms which succeeded were intense headache, as if a sharp instrument passed from temple to temple, on coughing or moving; great depression of spirits, amounting to absolute and dreadful despair; intolerable mental agony; copious secretion of colourless urine; clammy perspiration, exhaling to my own perception an acid disagreeable smell; a most distressing sensation of contraction or squeezing of the stomach, with occasional vomiting; taste highly disagreeable,

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yet clean tongue; pulse scarcely accelerated; no increased heat of skin; to a short period of delirium succeeded idiotic manner and gesture; insensibility, spasmodic contraction of limbs, and subultus tendinum. For several hours my situation appeared hopeless. During convalescence so much was the nervous system debilitated and so great was the exhaustion, that frequent fits, accurately resembling hysteria, occurred, excited by unpleasant thoughts, or some slight mental emotion.*

The following letter, I received from Dr. Montgomery, a few days after he had heard me lecture on the subject of the origin of Fever.

38, Cuffe-street, Dec. 8.

MY DEAR DOCTOR,

14. On the 10th of August I visited a patient in fever, and hearing from the nurse that there were spots on the patient's skin, I stooped very close to her to satisfy myself, and while so doing I was sensible of a very disagreeable odour from the skin. At the moment, it made a considerable im-

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* Upon the return of consciousness, every object appeared to me black, and beautifully exact and regular in its outline. I recollect one morning complimenting Dr. Cheyne upon his fine new suit of black clothes. This surprised him, as his dress happened to be, at the time in every thing but colour the very opposite of that which to me it appeared to be.

pression on the sense of smell, being almost as pungent as the odour from an ammoniacal salt. The smell continued *in my mind* all day ; and in the evening I complained that the air felt chilly, while others thought it very warm. The following morning I felt *almost* as well as usual, and ate my breakfast with my usual appetite ; but found afterwards that my stomach was *not comfortable*, though not absolutely sick. I immediately afterwards visited the same patient a second time, and again was struck with a similar sensation. I soon afterwards became chilly, weary, and uneasy ; grew giddy, shivered, vomited, and before evening had all the symptoms of the incipient stage of fever ; which ran the usual course of the present epidemic.

I think it right to add, that about eight days before, namely on the 4th of August, I had been four hours much exposed to infection, during my attendance upon a patient, who had miscarried while labouring under fever.

I remain very truly yours,

W. F. MONTGOMERY.

15. Nurse Clare, aged 50, had been much and fatiguingly occupied during Saturday the 23d of September, 1826. After having been two hours in bed, she was called in haste from her sleep, to give an injection to a patient labouring under typhous

fever of the worst kind. Whilst employed about this patient he vomited ; she was seized instantly with headach and sick stomach : these symptoms were followed by a rigor ; she took an emetic, which she said relieved her. 24th. She is unable to leave her bed, though anxious to rise : headach, pain in the back and loins, coated tongue, thirst, disagreeable taste, great debility. 28th. Vomiting, tongue brown and dry in the centre, pain in head, back and limbs. 1st of October. Epigastric tenderness, belly tympanitic, tongue in the centre brown and dry, at the point and edges florid, urgent thirst for cold drink ; vomits every thing, painful diarrhoea with tenesmus, stools scanty, fluid slightly tinged with blood, frequent ineffectual efforts to pass urine, skin moist and cool ; extremities cold, strength prostrate, noise in ears, night spent in alternate dosing and raving ; pulse 80, soft and weak ; countenance muddy and sunken ; delirium occasional during the day. On the 2d, a few petechiæ, large and black as ink appeared. 6th. Black petechiæ more numerous ; belly more tumid and painful. 9th. The surface of abdomen, to which some days previously a blister had been applied, presents generally a livid and gangrenous appearance. 10th, Nausea, vomiting, frequent stools, tenesmus ; only blood passed, and in clots ; teeth, gums and lips, covered with dark brown crust. 11th. All the symptoms aggravated ; dysenteric symptoms more urgent ; pulse scarcely to be felt ; strength completely prostrate ; death early on the morning of

the 12th. The treatment is not mentioned, because few of the remedies prescribed could, on account of the patient's obstinacy, be carried into effect. Body examined 30 hours after death; skin covered with dark and large petechiæ; thick bed of fat under the integuments of the abdomen. On convex surface of left lobe of liver a large patch covered with recently effused lymph; stomach strongly contracted; a considerable space of its internal surface presented a blush consisting of innumerable red dots; mucous surface of small intestines universally red; the redness increasing in intensity on approaching the large intestines; the cœcum nearly natural; slight redness of ascending colon; mucous membrane of great arch of colon deeply coloured; descending portion and rectum highly vascular, darkly red and spongy; * the surface smeared abundantly with a dark chocolate-coloured fluid; there were old adhesions between the colon gall-bladder and liver. In the head no morbid appearance, except in some parts a slight subarachnoid effusion.

I received from Dr. Connor, in writing, the following particulars. Previously to the time that Dr. Connor had been affected with fever, he had been a good deal cut up by hard reading and constant attendance at hospitals.

* Ulceration did not exist in any part of the intestinal mucous membrane.

16. On Sunday the 22d of October he had sat up during the whole night, and had watched closely a case of puerperal convulsions ; he had felt very anxious about the case, and was much fatigued and exhausted. At six o'clock on the morning of the 23d, he entered a ward in an hospital, which had been shut up since the removal of fever patients who had been there ; the room was offensive and ill-ventilated. On leaving the hospital, and whilst returning home, he found himself exceedingly languid and heavy, went to bed, and, after two hours' sleep, awoke with his head confused and giddy ; for some time he did not know where he was : during six hours he remained with no other symptoms than loss of appetite, confusion of thought, discoloration of tongue, increased frequency of pulse : at the end of that time a rigor ushered in fever of five days' duration, which terminated with distinct rigor and sweat ; after two days epistaxis, with more complete relief, occurred. After five or six days he relapsed ; crisis again on the fifth day with rigor, epistaxis and sweat : during his first fever the prominent symptoms were, severe headach and pain in the back of the neck, watchfulness and agitation, confusion in thought, slight delirium, singularly intermitting pulse, abdomen slightly tympanitic, respiration hurried : the fever of relapse was mild.

I am indebted to Doctor Stratten, one of the Physicians to the Cork-street Fever Hospital, for the following important statements :—

17. “ During the visiting hour of the hospital, I desired a nurse (at the time apparently in good health) to assist a patient, labouring under bad fever, to turn in his bed. Being extremely feeble, he endeavoured to support himself by placing his arms over the nurse’s neck, when she suddenly drew back, struck by the offensive odour which exhaled from his person ; exclaimed, that she had got fever : and said, that she felt it vibrating through every vein and nerve in her body. I observed that she instantly became cold, pale, and ghastly, like a person affected by sudden fright : she appeared about to faint ; and did not recover until she had taken some cordial medicine, and was removed to her room. The symptoms of fever succeeded, and she had an attack of most malignant fever, which continued for thirteen days.

“ Another nurse, a young, strong, and healthy woman, whom I visited in fever the day after she first began to complain, dated her illness from the moment that she had become suddenly indisposed on the preceding day, in consequence of having been struck by the offensive odour, exhaled from the alvine discharges of a patient labouring under fever in her ward. She had been engaged in her usual duties up to the moment when she had become thus suddenly indisposed. Her case was one of inflammatory fever, accompanied by petechiæ.

“ Grady and Kelly, porters at the hospital, were
“ attacked with fever in the Autumn of 1826.
“ They stated, that, having been breathed upon
“ by a patient, whom they were conveying to the
“ hospital from his own dwelling, they became
“ suddenly affected with extreme debility and a
“ sense of weakness about the knees, which obliged
“ them to sit down for some minutes and rest
“ themselves. This sensation was immediately
“ succeeded by sickness of stomach and a
“ tendency to faintness, which continued for
“ some minutes longer. Soon after their return
“ to the hospital I saw Grady ; his face was
“ pale, countenance ghastly, pulse weak and in-
“ distinct, a cold perspiration bedewed his fore-
“ head, and a feeling of chillness pervaded his
“ whole frame, particularly along the course of
“ the spine. This man’s fever was severe and
“ tedious. Kelly I did not see on his arrival at
“ the hospital.”

18. Corrigan, æt. 37, January 2, 1827, having sat up several nights attending her child* who was ill, on Tuesday last having raised in her bed a woman affected with severe typhus, perceived a heavy smell, and was instantly seized with pain across the eyes, head, and back ; felt very weak, sat down near the fire, and supported her head against the wall, and was seized with a trembling

* This child, of about eleven years of age, was affected with Tubercular Phthisis.

of cold which for several days afterwards did not altogether subside. Jan. 3d.—Dirty aspect, brown dry tongue ; thirst ; vomits medicines ; pulse frequent, small, and weak ; is very weak ; has pain of head and back ; costive bowels ; urine, as she says, like blood ; pressure at the epigastric region very painful. A protracted and dangerous fever ensued, she is now slowly recovering.

19. W. H. Ferrer, *ætat* 55-56, a large and very strongly made man, of most regular and temperate habits, and of remarkably healthy life till last May, when he had a trifling feverish illness, which was followed in July by an attack of well defined typhus mitior. After recovering from this, he complained occasionally of a sensation of lightness in his head and giddiness. His spirits, always very even, did not appear to have been at all lowered ; his appetite was much the same as it had been, except for breakfast, which now became his worst, and previously had been his best meal. On the evening of Thursday the 14th of December, he went, as he usually did every evening, to look into the cells, attached to the police-office for the confinement of prisoners, and on the opening of the door of one of them, he instantly turned away from it, complaining of a most intolerable stench issuing from it. It appears, that a vagrant boy had been permitted to sleep in this cell the preceding night, and that he could not obtain admission into any lodging-house in the town on account of having such a stench as rendered him

intolerably offensive ; and his father admitted that the boy had been very ill lately. W. H. F. complained much of this smell all the evening of the 14th, and also on the 15th ; on which day, however, he walked out and went through his usual avocations : but he was observed to eat very little dinner, and that little without the appearance of appetite ; he said, however, that he was very well. On the 16th he came in rather earlier than usual, and complained of a little chillness and of a slight pain in his back ; he went out, however, this night, observing, on being pressed not to do so, that “ he must go, as probably he would not soon be able to go out again.” All the 17th he was very restless and uneasy—lay on a sofa most of the day—drank frequently of lemonade—did not eat. On the 18th, 19th, 20th, remained in bed, had his feet bathed at night, and took some antimonial wine. On the 21st he got up, saying, that he could not endure staying in bed, as he slept almost incessantly and was much annoyed by dreams. All this day he looked very ill, and constantly seemed to be watching, as it were, every person and thing near him, at times in a wild, and again in a sorrowful dejected manner ; spoke very little ; his deafness (a chronic one) increased much ; took some salts, and afterwards complained constantly of a most disagreeable taste. On the 22d complained of a slight pain in his head, which soon went away, and did not again appear. Petechiæ were observed this day, well defined and florid, immediately under the clavicles. On the 23d

he remained in exactly the same state as on the preceding day. On the 24th he was seized with hiccough, at first at long intervals, which gradually became shorter; he slept much, and muttered while asleep. While awake he was perfectly collected and sensible; understood every thing passing about him; knew perfectly well a strange physician, whom the family physician had called in. On the 25th the hiccough ceased, and a heavy stertorous respiration succeeded; still he said, that he was free from pain, and that he thought he was better: he felt, however, a constant excitement in his stomach; the stertorous breathing increased this evening and night, and after some vomiting, and while being raised to facilitate this vomiting, he expired without a groan, or struggle, or any apparent pain, at half past five o'clock on the morning of the 26th.

It is to be remarked, that the pulse was not accelerated, nor the animal temperature increased during the progress of the disease.*

Such are a few, amongst many facts of the same kind, which I have been able to collect; every day's observation adds to their number. Before commenting on them I shall make some few remarks on a physiological question, which is of no small importance in the study of the origin of febrile disease, viz. the manner in which the

* I am indebted to the son of the gentleman whose case is here recorded for this statement.

febrile miasm, and other poisons, act primarily on the living body. An opinion is entertained by many, that poisons, to produce their specific effects, must necessarily be first absorbed and mingled with the circulating fluid ; and that, subsequently to this process, their peculiar injurious effects are called into action. This opinion, there are strong reasons to believe, is an erroneous one. It can, I think, in many instances be shewn, that the effects of a poison are evident in a time too short to admit of the possibility of the agency of absorption ; and also that the effects are rapid, in proportion to the high nervous endowments of the part, to which such poison may have been applied. Instantaneousness of action alone is a strong proof that it is directly upon the sentient extremities of the nerves that many poisons act, and this altogether independently of the process of absorption.* That

* The opinion that some poisons act independently of absorption, has been entertained by many. The following remark, made by John Hunter, proves that rapidity of action led him to doubt the agency of absorption, in accounting for the specific action of poisons whose effects are instantaneous ; his words are :

“ The Tectuna, poisoned arrow, &c. would seem to produce a
 “ peculiar constitutional affection from a local cause, for we can
 “ hardly suppose absorption to have taken place in *so short a time*.”
 Hunter on the Blood, Vol. 2. p. 213.

That this opinion was entertained by Whytt is clear from his works ; the following brief quotation from his “ Observations on the causes of nervous disorders,” distinctly expresses his views on the subject.

“ From these experiments it appears that not only those nerves, to which opium is immediately applied, are rendered incapable of performing their office ; but that the brain, spinal marrow, and

poisons are absorbed, and so affect injuriously the living body, I do not doubt ; but that many of them produce their effects at once, and in a time too short to admit of their being mingled with the circulating fluids, is an opinion which many facts lead me to adopt. My attention was at first directed to this circumstance by an accidental occurrence. Whilst conversing with a medical friend, I happened to put into his hand a bottle containing dis-

whole nervous system are affected in the same manner, *solely* by the action of the opium on the *nerves which it touches*. For its effects upon dogs are *too instantaneous* to allow of the supposition, that the more subtile parts of this poison are received into the blood, and by that means are conveyed to the brain : and in frogs *after the heart is taken out*, and consequently a stop put to the circulation, yet a solution of opium injected into the stomach and intestines has the same effect, as when these animals are entire."

That Monro in his "Experiments on the nervous system," entertained this same view of the action of some poisons, appears from the following quotation.

"As soon as the distilled water of Lauro-cerasus was poured into the stomach of a pigeon, it was convulsed, and died instantly, that is, before the poison could have entered the mass of blood. Many years ago, I found, after cutting the vena cava and aorta of a frog, that a watery solution of opium poured into the heart, occasioned, in a few minutes, convulsions in its legs ; and, after cutting out the heart, that the opium poured into the cavity of the abdomen affected the legs in like manner, although, in these experiments, the circulation was not only interrupted, but the greater part of the blood evacuated."

I therefore then concluded, and now conclude, that opium and other poisons, even after they are mixed with the mass of blood, produce their fatal effects, chiefly and almost by *solely* acting on the *nerves* of the heart and vascular system, and through these, affecting the whole of the nervous system."

tilled laurel water ; he removed the cork, with the view of ascertaining its strength by the smell, I saw him instantly lose colour, grow pale, and stagger. I was obliged to support him ; he became very pale and weak, panted for breath, and the skin became clammy. Some time elapsed before he was perfectly recovered. The next fact, which arrested my attention, occurred in my own person : whilst applying to the eye of a rabbit a drop of concentrated Prussic acid, I held the bottle containing it, uncorked in my hand ; I perceived strongly the smell, became instantly weak, vertiginous, pale, and covered with cold sweat. I was obliged to lie down ; and three hours elapsed before the effects of the poison had completely subsided. A few days afterwards I dropped on the nose of a large rat a drop of this same prussic acid, (the strongest I had ever possessed), instantly the animal fell, became convulsed, and in a few seconds was apparently dead.*

With the view of ascertaining, as accurately as possible, the length of time which elapses between the application of prussic acid to a sentient surface, and the first perceptible effects, several experiments were made upon rabbits and pigeons by Dr. Jacob and myself, in the presence of many of the medical students. The result of these experiments

* The action of the poison was so rapid and complete, that a servant who happened at the time to be present, said, with an oath, that he would remain no longer in a house where witchcraft was practised.

was, that in a space of time not exceeding five seconds the effects of the poison were, in many instances, distinctly perceptible. Now, although there can be little doubt that Prussic acid, when applied to the surface of the body, is ultimately absorbed, yet the rapidity of its action leads to the conclusion, that its first and instantaneous effect is upon the nervous system. Orfila, in treating of the narcotic poisons, says that, “being *rapidly absorbed*, they produce stupor, drowsiness, &c.” Here however we meet assertion, not proof. It is evident he must have been struck with the suddenness of their action, else he would not have assigned so much more rapidity of absorption to these poisons than he does to those which do not possess narcotic properties.* The effects of the narcotic poisons prove that they act injuriously upon the brain and nerves. They produce debility, stupor, vertigo, dilatation of the pupil, paralysis, convulsions; effects which are referable to altered cerebral and nervous functions, and these are produced in many instances so rapidly, as to leave little room to doubt that they depend upon the wonderful and inexplicable connexion established between the sentient extremities of the nerves and the brain.

* On the supposition that all poisons are absorbed, and mingled with the blood before they can produce their specific effects, it would be difficult to explain how it happens that some poisons should be absorbed, sent to the heart, and thence to the rest of the body in a few seconds, whilst others require a considerable length of time to be taken up by the absorbents, and conveyed throughout the system.

In explaining a phenomenon of this kind it is necessary to keep in recollection that the imperceptibly minute filaments of the extremities of the nerves of sensation are as infinitely expanded upon a sentient surface, as are the blood vessels and absorbents ; that if the puncture of the finest needle will wound a blood vessel in every assignable point of an highly organised surface, so will it likewise wound a nerve, and produce, if not pain, at least a distinct sensation ; these which are properly enough designated the sentient extremities* of the nerves, hold a direct and immediate communication with the brain, and through it with other parts of the body. That this instantaneous connexion between a sentient surface and the brain exists, is evident from the manner in which the healthy functions of the external senses are performed. The sensations of heat and cold, rough and smooth, hard and soft, and other qualities of bodies, are instantly conveyed to the brain, and perceived ; so likewise are injurious impressions. Should it be asked how it is that a poison applied to an abraded or a mucous surface should instantly disturb the cerebral and other functions, I should answer that I do not know ; and should in turn ask, how it is that a wound or an injury of the surface instantly produces the feeling of pain ; how it is that an electric shock,

* A poison applied to the *sentient extremities* of a nerve will produce effects quite different from those of the same poison, when applied to the extremity of the *divided* trunk of the same nerve.

smell, is but little protected against strong and poisonous influences; upon these surfaces the extremities of the nerves are endowed with peculiar sensibility, and these are the surfaces upon which poisons act with the greatest rapidity.*

* In this inquiry into the manner in which some poisons act upon the living body, I cannot forbear noticing briefly an interesting work lately published by Dr. Barry; the more so as his experiments have attracted much public notice, and appear to militate against the views put forward in this paper. The object of these experiments is, to prove that the force which propels the blood in the veins, and that which causes absorption, is atmospheric pressure. The experiments made by Dr. Barry are ingenious, and well devised; his deductions, however, appear to me altogether unwarrantable. Upon that part of his book, which refers to the venous circulation, I shall make no comment, because it has no distinct bearing upon the subject of this paper; I shall confine my remarks to his experiments and reasonings upon absorption. He has proved, by many and decisive experiments, that the action of the most powerful poisons, applied to an abraded surface, may either be suspended or prevented by placing over the part an exhausted glass; this is an useful fact, and well deserving of attention. These experiments have revived a mode of treating poisoned wounds, which had fallen into unmerited disuse. But what are the conclusions derived from these experiments? First, he takes for granted that these poisons must necessarily be absorbed, before they can act upon the system; this however is a mere assumption, and remains as yet unestablished: secondly, assuming that absorption is necessary, he concludes that, because absorption does not take place when the pressure of the air is removed, therefore absorption is *caused* by atmospheric pressure. And how does he argue? He tells us that the pressure of the atmosphere forces the particles of the poison into the open mouths of the absorbing vessels. There are, I believe, few, where vital actions are concerned, who will admit of an explanation so purely mechanical. In this explanation, the removal of the air from the cupping-glass is the only circumstance taken into the account, whereas in truth

Having thus far observed upon the instantaneousness of the action of some poisons, we proceed to the consideration of the facts stated at the commencement of this paper ; from these facts it appears, that the poison of contagion produces its effects with the same rapidity as the narcotic poisons, to which we have alluded. Headache, debility, sickness at stomach or vomiting, are amongst the symptoms first perceived ; these sensations, with the rapidity of an electric shock, are at the instant produced. This injurious impression upon the sentient extremities of the nerves is, in a few rare instances, so violent as to be very speedily fatal. More frequently the impression is

this is the least important ; as will plainly appear, when we consider the condition of the part upon which the exhausted glass is applied. First, the edge of the glass presses with a force proportioned to the degree of exhaustion ; if the air be very much exhausted, the pressure is so great as to cause considerable pain ; thus the edge of the glass produces all the effects of a *ligature*, and cuts off the communication between the parts within the glass and the rest of the system ; secondly the capillaries of the included part are immensely distended, often to a degree sufficient to produce ecchymosis and petechiæ, as I have frequently seen. Thus not only absorption, but every vital action must be impeded in a part so circumstanced ; and whether the poison act upon the nerves, or be taken into the blood vessels, its action is prevented by the strong pressure of the edge of the glass : and accordingly experiment has proved that the same effects are produced by a ligature round a limb, as by the cupping-glass ; and strong pressure made by a circular body, without at all removing the pressure of the air, will be as efficacious as the exhausted glass. Thus the experiments with the cupping-glasses neither prove that absorption is necessary ; nor, admitting its necessity, do they prove that atmospheric pressure has any thing to do with the matter.

less violent, but sufficiently strong to disturb the health, produce unpleasant sensations, and lay the foundation for disease. By far the greater number of patients, labouring under contagious fever, are not at all aware of the circumstances connected with the origin of their complaint; the impression made at the time of their exposure being in general either unheeded or forgotten. Indeed the impression is oftentimes so slight, as to lead one to think that contagion does no more than predispose to fever, and determine the nature of the disease, of which exposure to cold, fatigue, or some such accidental circumstance, is the immediately exciting cause; so that there appears much reason to believe that many are so mildly affected that, were it not for the super-addition of an exciting cause, they would altogether escape fever; hence it happens that numbers, affected with contagious fever, trace the origin of their complaint exclusively to cold, wet, and other exciting causes of disease; the time and circumstances of exposure to contagion having been entirely forgotten. Cases of this kind, which are by far the most numerous, throw but little light upon the origin of fever. It is only by a careful observation of facts of occasional and rare occurrence, such as those recorded in this paper, in which the effects of contagion are well marked and striking, that we can hope to obtain certain and satisfactory results. In the instances recorded, in which the patients were sensible at the moment of the impression made upon the system by the febrile

effluvia, some of the earliest symptoms complained of were headache, vertigo, nausea, vomiting, a sensation of coldness, and in many instances a sudden and complete prostration of strength. These primary symptoms did not always continue: in some instances they became less severe, or did in a good measure subside; yet the patient was not thereupon restored to health, on the contrary, a permanent injury was inflicted, and the foundation was laid in the system for a series of phenomena, which taken together constitute fever. The symptom, which is generally considered to mark the commencement of a febrile movement in the system, is that commotion of the nervous functions which has been technically termed a rigor; the interval of time between the injurious impression of the human miasm or other cause of fever, and the rigor or chillness ushering in fever, is that which has been denominated the latent period. In some instances, the infliction of the injury and the first symptoms of fever are simultaneous; in these cases, a latent period can scarcely be said to have existed. In other instances the fever begins and advances in a manner so slow and gradual, and its symptoms are so mixed up with those which belong to the latent period, that it is difficult to distinguish the one from the other; not infrequently the chillness is so slight, and of such frequent recurrence, and alternating as it sometimes happens with sensations of heat, that it becomes difficult, nay often impossible to ascertain the precise period, at which the fever

may be said to have commenced. Indeed it may be observed that those cases of fever in which reaction, or a distinct febrile movement, either does not at all, or does but feebly and imperfectly take place, are amongst the most dangerous and formidable varieties of this disease ; but the more ordinary march of nature is, that there shall be an interval of time, variable in duration, between the application of the poisonous effluvia to the surface, and the commencement of the febrile movement. During this interval of time a state of perfect health does not exist. In some instances, the deviation from health is so slight as scarcely to be perceived or regarded ; in some it is obvious, and is rendered manifest, not only by the patient's own sensations, but also by the altered expression of his countenance ; and there are instances, in which the latent period is one of the greatest danger, and one during which symptoms the most alarming and formidable do occasionally arise. The symptoms which characterise this period, whether they be slight or whether they be severe, indicate a disturbance affecting primarily and peculiarly the nervous system. This state of ill health is evinced more by disturbed sleep, uneasy dreams, painful forebodings, depression of spirits, mental inquietude, loss of muscular tone and vigour, than by any definite symptom of disease. In Barker and Cheyne's account of the fever lately epidemical in Ireland, there are some observations so appropriate, that the whole passage shall be quoted.

‘ We are not of opinion, that the time between
‘ exposure to contagion and the formation of the
‘ disease thereby caused, is a period of health:
‘ the nervous system was affected previous to
‘ any disorder of the circulating system. Thus,
‘ a patient, who lately died of fever, and who
‘ caught the disease from his sister, was unusually
‘ irritable for some weeks before he died. During
‘ the time between his exposure to contagion and
‘ the rigor which proved introductory of fever,
‘ he made many anxious inquiries relative to the
‘ management of fever hospitals, and the treat-
‘ ment of the patients, and expressed his belief
‘ that he should die of his sister’s disease. Several
‘ instances have come to our knowledge, wherein
‘ a disagreeable idea, or some anticipation of
‘ calamity or death has, for several weeks before
‘ the formation of a fatal fever, taken possession
‘ of the mind, in spite of every effort to banish it.
‘ In proof of a diseased state of the mind we may,
‘ upon the authority of a physician of this city
‘ of great respectability, relate the following anecdote:—Mr. D——, a professional gentleman,
‘ who resided in the town of L——, at the
‘ time when fever was becoming epidemical,
‘ dreamt on a Thursday night, that in walking
‘ down the main street of the town a man ac-
‘ costed him thus: “D——, unless you leave
“ this, you will be a dead man before another
“ month is past.” On Friday night he had the
‘ same dream, and again on Saturday night. His
‘ friends now observed, that he was reserved and

‘ melancholy, and they made every effort in their
‘ power, by seldom leaving him alone, and by
‘ forming little parties for his amusement, to
‘ dissipate his melancholy, but to little purpose ;
‘ for, during the ensuing fortnight, he more than
‘ once said to his wife, “ God help you and your
“ children, for you will not have me to provide
“ for you much longer.” At the end of a fortnight
‘ he was attacked with the epidemic fever, and
‘ two days after seizure he related his dream to
‘ his wife, at the same time adding, that he was
‘ convinced his disease would be fatal. He died on
‘ Saturday, being the fifteenth day of his fever,
‘ and the twenty-ninth from his third warning
‘ dream. The foregoing singular circumstance
‘ was not communicated by his wife to his phy-
‘ sician till he was in a state of delirium, attended
‘ with every symptom of approaching death, other-
‘ wise that gentleman would have had him re-
‘ moved from the town of L———’.

The interval of time, which elapses between the moment of infection and the commencement of fever, is one upon which the attention of the practical physician should, in a very particular manner, be fixed. The consideration of the latent period of fever leads to the knowledge of a law of nature very general and extensive in its application. The clearest conception of this law may be derived from an analysis of the progress of those exanthematous fevers, which are propagable by inoculation. The variolous poison is

applied to an abraded surface; an interval of time elapses, during which apparently no new or unusual action is going on in the part to which the poison had been applied; at length there appears on this part a local disease, similar in every respect to that which had originally generated the poison; so that, between the moment of the application of the poison, and the production of the local disease,* a time, during which unseen changes are going forward in the part, elapses; this we may call the first latent period. Then, from the formation of the local disease until the occurrence of the rigor or rigors, which usher in the fever, symptomatic of a similar disease generally upon the surface of the body, a second period intervenes. Thus we find that there are unperceived topical changes, previously to the full formation of the local variolous disease; as well as obscure constitutional disturbances, which precede the developement of the febrile movement of the system. In diseases, which originate in impressions of cold acting injuriously upon the surface of the body, a latent period is likewise found to exist. This is illustrated by the following case:—A young gentleman, thinly clad, stood in a narrow street, exposed to a cold easterly

* It seems highly probable, that, in every case of local inflammation, a local change, similar in its nature to the latent period of fever, must take place antecedently to the developement of those symptoms which are characteristic of inflammatory action. This is probably a change in the sensibility, or nervous functions of the part.

wind till thereby chilled ; he returned home chilly and unwell ; in four hours afterwards he was seized with a very violent rigor, which, having lasted upwards of an hour, was followed by burning heat of skin, unquenchable thirst, intense headache, strong frequent pulse, great difficulty and pain in swallowing, and on inspecting the fauces, the tonsils and uvula were found to be highly inflamed and swollen ; he drank greedily of whey, in which, without his knowledge, two grains of tartarised antimony had been dissolved. The emetic acted powerfully and frequently—profuse perspiration ensued. The symptoms, local and constitutional, subsided speedily. This case is an example of severe disease, general and topical, resulting from a strong impression made upon the surface of the body, as well as of the existence of a latent period, or a period of depression, antecedent to the stage of re-action and excitement. The following fact exemplifies, in a remarkable manner, the same principles :—A gentleman, about 40 years of age, plethoric, nervous, predisposed to gout both from the form of his person and hereditarily, was informed suddenly that his most intimate friend had just been thrown from his gig, and killed on the spot ; he immediately felt a sickness at stomach, and complained of headache ; he remained for two or three days unwell and depressed ; he then was seized with feverish symptoms, and with inflammation, evidently gouty in its character, in the ball of the great toe. He had a severe and pro-

tracted fit of the gout. At the time of this occurrence this gentleman was in his usual health ; two years previously he had had his first fit of the gout, and had continued free from any ailment until the time when this severe shock produced a second attack of the same disease. Thus a strong impression was made upon the system, an obscure period of disturbed health ensued, upon which the disease to which a predisposition existed, was fully developed. I know not any conditions of disease more strikingly illustrative of these principles, than the effects immediate and remote of protracted operations, severe injuries, and extensive burns. In all of these a strong and injurious impression is made upon the nervous system ; a period of disturbed nervous function, one corresponding with the latent period of fever, ensues. In severe injuries this is a time of the utmost danger ; the injury inflicted upon the nervous system being oftentimes so great, that the patient sinks during the stage of depression.* When a surface, either of great extent or high organization,

* It is strange that these two stages, the first that of depression, which is the immediate result of the injury, the second that of reaction, which is a more remote consequence, should be so frequently confounded in practice. These states are the opposite of each other ; and demand distinct, nay opposite modes of treatment. How often have I seen orders issued to bleed, the moment a severe injury had been sustained ; even though the pulse was like a thread at the wrist, the extremities cold, the face bloodless, and the vital powers nearly extinct. Such is the consequence of prescribing for names, and not regarding the real state of the patient.

has been burned, the patient dies soon after the injury, exhibiting symptoms merely of deranged and injured nervous function ; the shock to the nervous system having been too violent to leave the capability of reaction. When power is left in the constitution sufficient to excite reaction, then some degree of hope remains for the patient ; new symptoms, and a new source of danger less immediately imminent than the first, arise. Now this is precisely what happens in the most intense and dangerous forms of contagious fever ; the most formidable cases being those, in which the power of bringing about reaction is taken away, and the patient sinks during the latent period ;* the safest cases of fever on the contrary being those, in which a capability of exciting distinct and well marked reaction is still left in the constitution. The disease termed cholera morbus, particularly as it occurs in hot climates, presents the same series of phenomena : first, an injurious impression is made upon the surface of the body, in consequence of which the

* This is that variety of fever which Dr. Armstrong has designated congestive fever, a name derived from its supposed cause, viz. venous congestion : but those, who have seen the disease, or have read attentively his history of the symptoms, and who at the same time have observed other diseases of which an over-loaded state of the veins is a leading feature, will scarcely admit, that venous congestion (a change in the venous system, which, if it exist at all during life, is itself but an effect) can satisfactorily account for a series of symptoms, such as those which characterise this worst and most dangerous variety of fever.

vital actions are impaired and depressed * to an extent sufficient, in peculiar conditions of the atmosphere, to destroy life in a few hours ; should the patient survive this immediate and most imminent danger, a struggle takes place in the constitution, and symptoms indicative of reaction manifest themselves. Thus it appears that the injury inflicted, whether it be by the poison of contagion, a chill of cold, a vehement mental emotion, or a severe mechanical injury, affects and impairs primarily the nervous system, and produces the symptoms which characterise the latent period ; a period which, whether in duration it be short or protracted, and in degree slight or severe, is rarely, if ever, altogether absent.

In most diseases the length of the latent period

* From the most authentic accounts we possess of this disease it appears, that, when the malady rages most virulently and fatally in the East Indies, the majority of those attacked die during the latent period, before the purging and vomiting, which may be considered the stage of reaction, can have had time to set in ; and accordingly we find that the most approved treatment for the disease, at this stage, is to give brandy and opium in enormous doses, to stimulate powerfully, and to allay what the older writers would term the nervous erethism. I am surprised that, in the treatment, more importance is not attached to those means, which turn the tide of the circulation from the interior to the surface of the body. I have seen more pointed advantage in the severe cases of cholera morbus, which occur occasionally during Autumnal weather in this climate, from stimulating fomentations applied generally and perseveringly over the surface of the body, than from any single remedy usually adopted in the treatment of this dangerous malady.

is extremely variable ; in idiopathic fevers it varies from a few hours to as many weeks or months ; in exanthematous fevers its duration is more uniform than in other febrile affections ; in some diseases it endures to a length of time that is very remarkable ; this is strikingly exemplified in cases of hydrophobia, the constitutional symptoms of which are in some instances not manifested for many months after the infliction of the local injury ; so likewise the first paroxysm of ague is often postponed to a period very remote from that of exposure to the malaria ; the truth of this assertion is established by numerous cases of ague, which, at certain seasons of the year, are admitted into the wards of Steevens's Hospital. It is well known that many of the poorest of the Irish peasantry pass over at the harvest season to seek employment in the sister country. Of these many are employed in the fenny districts ; months afterwards, but not until their return to Ireland, they are attacked with intermitting fever. I possess many recorded facts of this kind. Some of the Irish labourers are attacked with ague in England, and come over to this country still labouring under the disease ; but the greater number are seized with the first fit of the disease, upon exposure to wet and cold, either on their journey, or, as it more frequently happens, *after* their return to Ireland. From numerous observations I am led to think that the latent period may be shortened, and the accession of the constitutional symptoms accelerated, by the occurrence of what

are technically called the exciting causes of disease. A disposition to some particular affection having been produced, perhaps, in a very slight degree, an exciting cause is superadded, which immediately brings on morbid action, the *nature* of which is determined by the then existing predisposition. Thus, a person of a gouty diathesis receives an injury, inflammation ensues ; he is ignorant of its nature, but he is amazed on being assured, and he can scarcely be convinced, that the inflammation is gouty, and that a bruise or a sprain is capable of producing a fit of the gout. Yet it is thus that a first fit of the gout is often produced. There is a latent tendency to gout—an injury determines its access. In like manner a patient labours for a length of time under various anomalous and unaccountable symptoms, until at length an attack of gout, or some other local affection, explains the symptoms, and reveals the true nature of the disease. Dr. Baillie states the case of a man, who had palpitation of the heart for many months, (not relieved by any treatment,) which suddenly ceased upon an attack of gout. Numerous facts might easily be adduced to establish the position, that the accidental occurrence of an exciting cause shortens the latent period, and hurries on the symptoms of the impending disease. To illustrate this the following case will suffice : A boy, twelve years old, was playing with a favourite dog, and was bitten by him on the nose. The injury was slight. A few days afterwards the dog died rabid. The wound soon

healed, and the circumstance made no impression on the boy's mind, and was wholly forgotten. Four weeks afterwards, whilst playing, he was thrown by his companions into a ditch ; he went home wet, chilled, and complaining that he felt ill : that very night unequivocal symptoms of hydrophobia manifested themselves which proved speedily fatal.

The facts, which have been enumerated respecting the origin of fever, may be looked upon by some as merely the exciting causes of fever, a disposition to which had been previously established. In some of these facts this may have been the case ; but certainly it is not so in all. In several, the patient was suddenly infected, and no room is left for the supposition that there had been any previous action of the febrile poison upon the system ; the poisonous miasmata being capable not only of exciting disease, but of determining its nature. I have known and have on record several instances of persons once, and once only, exposed to the effluvia arising from the body of a patient labouring under measles, who, after a latent period of several days*, have been themselves attacked with the same disease ; in these instances a single exposure becomes at once the predisposing and exciting cause of disease. But it is important to observe, that,

* In one case exposure to measles, (a single exposure) took place on the 23d of March; on the 3d of April the catarrhal symptoms took place ; on the 5th, the eruption.

vain, by occupation and exertion to rid themselves of the load of sickness which oppresses them. A slight illness by a strong effort may be prevented, but a severe one is thus greatly—often fatally aggravated. This attempt to throw off disease has been made by many, and many in the effort have forfeited their lives. Anxiety about business often tempts medical men to engage in it, at a time when they are themselves convinced they ought to remain quiet and at rest. Not fever only, but every severe disease is aggravated by exertion mental or corporeal, during the latent period. It may here be observed, that a minute investigation of the origin of the complaint, and of the obscure symptoms which exist during the latent period, may sometimes afford an useful hint, as to the nature of the approaching ailment. Thus those who have slept in a damp bed often feel uneasy sensations in their joints for many days before the rheumatic fever sets in. Thus the appearance of the eyes, and slight coryza, may lead us to expect measles, when there is reason to think the patient had been exposed to infection. So in various other diseases, an accurate analysis of the existing symptoms and of the previous history, may throw light upon the obscurity of the latent period, and lead us to know the nature of that affection which as yet lurks, and is hidden in the system. In many obscure and nervous cases, a knowledge of the nature of previous illnesses, and even of family pre-dispositions, may enable us to discover what the

smell, and sickened by exposure to the miasmata emanating from the body of a fever patient. The same remark is applicable to the case of Dr. Parkinson. At the time when I myself felt the shock produced by the morbid effluvia, I was exhausted to an extreme degree by long abstinence, and great fatigue : I had also, for months previously, been in the habit of sitting up (my mind intently and laboriously occupied) till after midnight ; a fact which will, I suppose, account for the brain having been more disordered in function than any other viscus of the body during the whole course of the fever with which I was affected. It is also observed of Dr. Waring, that for some time previously to his having caught the fever, which proved so rapidly fatal, he had too laboriously exercised his mind in preparing and delivering a course of lectures : thus was his system placed in a condition least fitted to resist the injurious influence of a poison. His too was an example of that state of the frame which renders fever—so generally mild among the poor—fatal and destructive in the higher ranks of life. In

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matter) is necessary, appears to derive support from the fact that the usual cause of hectic fever is one of a permanent nature ; a local disease which, as long as it exists, excites in the system the febrile movements termed hectic. The phenomena which manifest themselves in the course of an exanthematous fever also give rise to this notion ; yet that, to excite and maintain continued fever, an *abiding* cause is *not* necessary, might be proved in various ways ; but the fact that a *single* mental shock often produces *protracted* disease is decisive upon this point.

the latter, the violence of the disease falls on the brain and nerves, and I know not of any malady more formidable than that which is vulgarly, but not inaptly termed—Brain fever. In large cities the minds of those who are engaged anxiously in literary, professional, or mercantile pursuits, are kept in a state of constant and often excessive activity. Those who are thus circumstanced are harassed by desires, anxieties, vexations and disappointments to which persons supported by bodily labour are strangers. Indeed were it not for the pernicious effects of ardent spirits, we should meet with much fewer cases amongst the poor, of fever affecting dangerously the sensorial functions.* I find that the disease which may be termed brain fever, as it occurs in hospital practice, is of most frequent occurrence amongst those who have previously lived intemperately, and have been in habits of almost daily intoxication; so that drunkenness would appear to influence febrile disease among the poor, in the same manner as excessive action of the brain does among the rich :

* I do not mean to assert that the poor are exempt from those painful anxieties of mind which render fever so formidable in the higher walks of life : even amongst the lowest orders of society we find some whose feelings are acute, and whose *mental* sufferings have been so great as to give a dangerous character to any febrile disease with which they may happen to be affected. But I am sure that the fever of the poor is materially influenced by the habit of drinking ardent spirits, and I have little doubt that the severity as well frequency of fever in this country, would be greatly diminished, if the drinking of good malt liquor were substituted

and if a comparison be instituted, a striking resemblance will be found to exist between the fever of an habitual drunkard,* and the fever of those whose minds have been previously in a state of continual and morbid excitement. It appears then that every thing which exhausts, relaxes, and debilitates the frame, and breaks down or impairs the health, places the system in a state least fitted to resist the febrile miasm. Whilst the constitution is vigorous and the health good, little is to be feared from contagion ; it is only at a moment of debility or ill health, that it becomes operative and dangerous ; unless (which rarely happens) it be applied in a dose so large as to overwhelm even the strongest and most healthy constitution. Hence it occurs that when a famine prevails, mind and body sink together, and contagious disease is diffused widely and rapidly. A nucleus of contagion is never wanting. Apply the cooperating causes, and a scattered case or two of infectious disease will suffice to propagate the malady

* At the commencement of my attendance in the fever wards of an hospital, I was not aware of the practical importance of inquiry into the previous habits of life of those affected with the severer forms of typhus. One man labouring under the usual symptoms of typhus gravior, died almost immediately after a moderate bleeding from the temporal artery. I afterwards learned he had been an habitual spirit-drinker. Having been struck with the resemblance between this kind of fever and the delirium tremens of intoxication, I resolved on the next occasion to give opium liberally, and to this I was led also by the consideration that utter sleeplessness formed a remarkable feature of such fevers. In many cases of this kind which have lately fallen under my care, I have given a full opiate :—sound and protracted sleep has ensued, and frequently the patient has awaked convalescent.

throughout a kingdom. Remove the cooperating causes, the disease will no longer spread, and the epidemic will cease. Next to famine, the cause which most frequently renders the body susceptible of disease resides in the atmosphere: what that is in the condition of the air we breath which impairs the health and debilitates the frame, and thus renders the human body more liable to contagious and other injurious influences, remains yet to be discovered. The epidemic which now exists in Dublin would seem both from its peculiar character and from the fact that it has prevailed in districts where the necessaries of life are not unusually deficient, to depend in some degree upon that *something* in the atmosphere which either produces disease or renders the body liable to it. Poverty, impure air, and the concomitant of want, depression of mind, always produce a susceptibility to fever, and render the disease at all times a prevailing one in Dublin; but to these are added that which has been termed by Sydenham *atmospheric constitution*, about the nature of which we are as yet very much in the dark; this is a subject which deserves to be explored more accurately than heretofore; but to be explored successfully it must be done, not by general statements and a system of reasoning, but by facts and observations repeated and recorded. As those agents which impair the health, or debilitate the frame, render the body susceptible of the injurious action of the febrile and other poisons, so those circumstances which produce artificial and temporary excitement, have the power of pro-

protecting the system against the deleterious effects of a poison unless it be applied so largely and frequently as to overpower the most vigorous. Thus do we find that those who earnestly and anxiously attend night and day the sick bed of a friend or a relation, are proof against infection, notwithstanding the utmost degree of fatigue, watchfulness, and abstinence, so long as the mind is kept in a state of intense anxiety ; but the moment this mental excitement begins to subside, a state of relaxation ensues, during which contagion operates speedily, and too often fatally. Whilst the excitement of intoxication is present, fever may not be acquired : but upon one in the relaxed and exhausted condition which follows a debauch, even a small dose of the febrile or other poison is found to act powerfully. This is exemplified by the well known fact that where pain is intense, opium may be given with impunity in doses, which, if taken in the state of relaxation which succeeds upon protracted suffering, would be instantly fatal : so likewise have I observed that, where the attempt had been made to reduce a dislocation, and had not succeeded ; the most powerful emetic medicines given with the object of producing relaxation, failed to act, whilst the patient was in anxious expectation of a renewal of similar painful efforts ; but when the patient was replaced in bed, and assured that his sufferings were at an end, a minute dose of an emetic medicine sufficed to excite sickness and vomiting. The principle here put forward is illustrated by the effects of slight injuries received in the dissecting room.—Without

entering into the discussion as to whether these wounds are poisonous or not, there can be little doubt that whether it be simply an injury, or a poison applied to an injured surface, the fatal effects which so often ensue, must depend upon the depraved state of the health at the time of the infliction of the injury. I have myself been repeatedly wounded during dissection, and have been thus inoculated with the matter of bodies still warm, and of bodies in a state of putrefaction, and yet have not sustained any injury; whereas at a time of unusual exhaustion and fatigue an injury so slight as merely to raise the cuticle, without even an appearance of blood, and that with an instrument which had not been used for several weeks, was sufficient to give rise to the most alarming constitutional and local symptoms. I may here add that Mr. Shekleton,* (the history of whose case is given in this Volume,) stated at lecture a few days before the infliction of the fatal wound, an opinion such as is here put forward, that the dangerous consequences resulting from wounds received during dissection, depend upon a depraved or injured state of constitution in the persons wounded.

To corroborate the principles upon which we now dwell, we shall proceed to analyse, the manner in which cold operates upon the living body. Cold, like contagion, is an impression made

* Mr. S. previously to the infliction of the slight wound followed by his death, had injured his health by unusual fatigue and exertion.

upon the sentient extremities of the nerves ; its first effects are, in like manner, instantaneous ; its action, though powerful, is resisted when the body is vigorous and strong : impressions of cold, when acting upon those who are weak, exhausted, fatigued, or relaxed, are followed very frequently by consequences formidable and even fatal. It is supposed by many that the ill effects of cold depend upon suppressed perspiration ; that this opinion is erroneous, experiments decisive and frequently repeated prove ; injury from cold is thus far connected with perspiration, in as much as perspiration having continued for a certain length of time, manifests, and often produces a relaxed condition of the system. But to establish the principle, that it is a state of relaxation or debility which renders the frame susceptible of the injurious effects of sudden or protracted impressions of cold, cases of disease thus produced shall be stated.

An athletic man having engaged in a wrestling match, and having continued to exert himself until he became not only much heated, but greatly exhausted and fatigued, drank from an adjoining spring copiously of cold water ; immediately he applied his hand to his stomach, became faint and pale, and in a few minutes expired.

A similar fact is stated by Dr. Currie. (Medical Reports, page 96.) He mentions the case of a young man who had been engaged a long time in a most severe match at fives. “ After it was over

he sat down on the ground, panting for breath, and covered with profuse perspiration. In this state he called to a servant to bring him a pitcher of cold water, just drawn from a pump in sight. He held it in his hand for some minutes, then put it to his head as soon as he had recovered his breath, and drank a large quantity at once. He laid his hand on his stomach, and bent forwards; his countenance became pale, his breath laborious, and in a few minutes he expired. Various methods were employed to restore him, but in vain." There are on record many facts of the same kind.

It is thus that sudden death, or dangerous disease is caused amongst soldiers who, fatigued and exhausted by a long day's march in hot weather, are tempted to take large draughts of the coldest drinks they can procure.

In like manner, sudden death is sometimes the consequence of plunging into a cold bath at a moment when exhaustion or relaxation from heat and protracted muscular action, render the body incapable of resisting the injurious impression of cold applied universally upon the external sentient surface of the body.* Dr. Franklin in his essay

* This is the most frequent cause of sudden death from cold bathing. Many are of opinion that the danger arises from plunging into cold water whilst *perspiration* is present, and hence they are led imprudently to wait for a time until the heat and perspiration subside. Thus a state of relaxation is induced

on swimming, states the following fact : “ I once knew an instance of four young men, who having worked at harvest in the heat of the day, with a view of refreshing themselves, plunged into a spring of cold water ; two died on the spot, a third the next morning, and the fourth recovered with great difficulty.”

I have seen, in several instances a Jaundice produced by cold drink taken after continued exercise in hot weather. The cold drink has produced at the time a chill ; for some hours, or perhaps for a few days afterwards, the during which the shock of an impression of cold upon the surface is much less safe than if they had at once, whilst warm and vigorous from exercise, plunged into the cold bath. It is dangerous to be relaxed or chilled at the moment when cold is strongly applied to the surface of the body. That the mere presence of perspiration is not the cause of danger, is proved by the fact established from numerous experiments, that whilst the system is vigorous, and the strength unimpaired, there is no danger in passing from a hot bath *immediately* into a cold one, or from a heated room into cold air.” During the whole day (says Sir Charles Blagden, Trans. Royal Society, Vol. lxxv. p. 3,) we passed from the heated room, (its temperature was above 200°) after every experiment, immediately into the cold air.” “ After exposing our naked bodies to the heat, and *sweating most violently*, we instantly went into a cold room, and staid there, even some minutes before we began to dress, yet no one received the least injury.” In Russia it is a common practice after remaining some time in the hot bath to roll naked in the snow. The cold bath is rendered dangerous by exhaustion after a full meal, after prolonged muscular action, after profuse or continued perspiration. Hence it is that moderate bracing exercise, a glass of wine, or other cordial, remaining a few minutes in a warm bath, will render the shock of the cold bath not only safe, but highly beneficial to the invalid, who, without these precautions would have been injured by it.

patient finds himself not in his usual health ; and at length he becomes universally jaundiced.*

A young gentleman, after continued walking exercise during the morning of an oppressively warm day in autumn, took ice largely. On the evening of that day he complained of cramps in the lower limbs, and was then seized with a vomiting and purging which continued all night ; next day I found him in a state of complete collapse ; his extremities were cold and livid ; there was no pulse at the wrists ; he was insensible, and on entering his chamber the cadaverous smell was strongly perceptible. Blisters were immediately applied, and diluted brandy and opium were given ; these means having proved ineffectual, it was resolved to give spirits of turpentine in full doses ; this medicine, diluted with water, was persevered in until about three ounces were by degrees taken, the pulse then returned feebly to the wrist, some urine was expelled with great force from the bladder, a full alvine discharge took place, the patient rallied ; and after a few days of high reaction and fever, was restored to perfect health.

A labouring man, healthy, muscular, and robust, who was employed in reaping wheat near Dublin, worked almost incessantly during the entire of an

* The cause and nature of this form of jaundice, I have endeavoured to explain in my paper on that subject, in the third volume of the Dublin Hospital Reports.

intensely warm summer's day ; the evening was chill ; he complained of great exhaustion ; said he *felt* the cold ; was seized with cramps, which were soon followed by incessant vomiting and purging : he died in twenty-four hours from the commencement of the attack. I carefully examined his body. The stomach and small intestines were very much contracted ; there were partial contractions of a few inches in length, in which portions of small intestine were diminished to a size scarcely exceeding that of a quill. The mucous membrane presented generally a florid and highly injected appearance. The gall bladder was greatly distended with bile natural in appearance ; none of which, it deserves to be noticed, had escaped into the duodenum. The viscera of the thorax presented no indications of disease.

A medical gentleman, whilst labouring under a slight bowel complaint, walked a distance of about six miles from Dublin. This occurred in the month of August, when the weather was very warm ; he walked back in haste, to be in time for his engagement to dine with a friend. On returning to his lodgings he hastily changed his clothes, and walked to a remote part of the city to his friend's house. On arriving there, he felt himself much tired, and moist with perspiration ; to refresh and cool himself he sat at an open window. In a few hours he complained of uneasiness in his bowels, and returning early to his lodgings he was obliged to go to bed. He spent a very restless

night, with pain in his bowels, and frequent stools. I saw him next day labouring under dysenteric fever, the symptoms of which, local and constitutional, were unusually severe. The stools were very frequent, at first consisting of blood and lymph, and as the disease advanced, of blood mixed with a muco-purulent matter, exhaling a peculiar, warm, disagreeable, earthy odour; and so violent was the tenesmus, that it frequently produced a tetanic rigidity or spasm of the muscles of voluntary motion, accompanied with coldness and lividity of the extremities. The pulse was rapid and unresisting, the skin always moist, tongue thickly coated and yellow, thirst urgent, the stomach extremely irritable. The fever and dysentery continued for nearly four weeks, and for several days his recovery was not expected.

These cases tend to establish the principle that it is not a state of perspiration merely, but one of relaxation and exhaustion * which renders the bo-

* A fact related by Dr. Currie, page 120, illustrates well this opinion. He gives an account of two students of medicine who undertook together a tour: after a walk of many miles during the heat of the day, *heated but not fatigued*, they plunged into a river and were greatly refreshed. One of them, late in the day, when *wearied and perfectly cool*, plunged again into the water, but soon came out extremely cold; he became chilly and feverish, and continued ill for several days afterwards. The narrative is given by Dr. Currie more circumstantially, in his usual animated and pleasing style. The same principle is illustrated by the practice amongst the Roman youth, after violent exercise, and whilst bathed in perspiration, of plunging into the Tyber; but they did so with impunity, because their bodies were vigorous, and their strength unimpaired.

dy susceptible of the injurious impressions of cold—impressions which are capable of producing every variety of disease, local and constitutional. In one state of the atmosphere, as at the autumnal season, impressions of cold internally or externally applied during a state of relaxation or debility, produce fevers, cholera morbus, dysentery; in another state of the air, as during the east winds of spring, catarrhal fevers, and other pulmonary affections. Constitutional predisposition, hereditary or acquired, is often that which determines the character of the disease which after a chill, shall arise. Thus in one person an impression of cold shall give rise to a fit of the gout, in another to an attack of rheumatism, in a third, to inflammation of the tonsils.

The fact that debility, relaxation or exhaustion, render impressions of cold upon the sentient extremities of the nerves dangerous, explains many curious phenomena. It explains to us the increased liability to disease which exists in hot climates, where the heat of the sun during the day is intense and oppressive, and the dews of the evening chill and cold;—heat relaxes and debilitates the frame, and produces that state in which impressions of cold are most to be dreaded.* It explains to us the danger of expo-

* Heat not only relaxes and debilitates, but it also renders the transition from heat to cold more striking and perceptible. This is proved by the familiar experiment of plunging the hands, one into very cold, the other into very warm water, and after retaining them there for a few minutes, plunging both into luke warm wa-

sure to cold during convalescence, after a debilitating disease ; it explains also the increased liability to cold which exists either during sleep or immediately upon awaking ; that sleep is a state of general relaxation, during which there is complete rest to the voluntary actions, and comparative rest to the involuntary, can be established by various proofs ; it is remarkably shewn by a pathological fact, which falls almost daily under the physician's notice ; I allude to those cases of disease in which profuse perspiration occurs *only* during sleep.—I have known many dread the idea of falling asleep, solely on this account. I this day saw in consultation a lady affected with uterine disease, who perspires profusely whenever sleep comes on, but at no other time. It is owing to this relaxed state of the frame that exposure to contagion, or to cold, either during sleep or immediately upon awaking, is attended with so much danger. Dr. Crawford (see case) when last in Dublin, mentioned to me a fact which strikingly illustrates this point. He and Mr. M'Dowel, one of the surgeons to the Richmond Hospital, went together to see the patient by whom Dr. C. was infected. Dr. C. entered the ward, having been suddenly roused from sleep, and without having taken food. Mr. M'Dowel had eaten breakfast, and had ridden about a mile before he came to the hospital ; they were both alike oppressed by the

ter ; to the hand which had remained in the hot water the luke warm water now feels *cold*. Thus, after a hot and oppressive day, the evening feels more chill and cold than it really is.

smell issuing from this patient. Mr. M'Dowel escaped. Dr. C. had a dangerous and protracted fever. The one was exposed to the poisonous effluvia, whilst in a state of relaxation ; the other was similarly exposed ; but had previously been invigorated by moderate exercise and by food. Children who are robust, and who bear exposure to cold during the day without injury, often catch cold by throwing off their bed coverings during sleep. Many suffer severely from falling asleep in the open air. It is a time during which exposure to cold is attended with danger, because it is a time when there is a general relaxation of the system, and all the vital actions proceed with diminished energy. These considerations lead us to a knowledge of the conditions of fever, to which alone the cold dashing is applicable ; it is only during the stage of reaction or excitement, that this sometimes useful remedy can with safety be employed : when the stage of relaxation which must follow upon continued excitement sets in, the cold dashing is dangerous. There are many, and these the worst cases of typhus, which will not at any stage admit of the employment of this remedy ; the cases to which I allude are those in which, even though the heat of the surface be considerably augmented, there is throughout the disease a depressed and sunken condition of the patient. It was the opinion of Dr. Currie, that the shock of the impression of cold upon the surface is dangerous only when the body is *cooling after having been heated* : but this in effect means

when the period of relaxation after previous exertion or excitement shall have arrived—so that in employing as a remedy a shock of cold, that which should chiefly be attended to is not so much the temperature, as the presence or absence of excitement and reaction, and the degree of force or vigour which still remain in the system. Perspiration, if of some hours duration, forbids the employment of the cold dashing, merely because it indicates a state of relaxation and debility. The cold dashing then cannot be employed with safety during the latent period or cold stage of fever, nor during the stage of relaxation and exhaustion which remain upon the subsidence of reaction. When reaction or delirium* run high, and the patient has strength sufficient to endure the shock, then, and then only, is this remedy applicable; and the earlier, during the stage of excitement that it is employed, the safer and the more efficacious will it be. If then we analyse the effects of impressions of cold upon the living body, we shall find them obedient to the same laws which regulate the action of the contagious effluvia. In both there is an impression made upon the sentient extremities of the nerves, which, unless it be very powerful, the body in full strength and vigour is

* I have often ordered, with much advantage, the cold shower bath for patients in the delirium of fever, at a time when the temperature of the surface was not raised above the standard of health. But this was done at a moment of the highest excitement, and when the patient's strength was evidently equal to the endurance of the shock.

capable of resisting; but if the body from any cause be weak, relaxed or exhausted, the impression in both instances is capable of producing at the time injurious effects, and subsequently a series of morbid actions, both local and constitutional. In both there is generally a latent period characterised by obscure nervous symptoms, antecedently to those changes in the vascular system, which form a prominent feature in febrile reaction, and in local inflammations. The fever produced by contagion is in general more formidable and less under the control of remedies than that produced by a chill from cold.

From the foregoing considerations it will not be difficult to arrive at a knowledge of the means best calculated to guard against contagion. In the first place, those whose duty compels them to visit patients labouring under infectious diseases, should avoid, as far as is possible, the concentrated effluvia, which emanate from the persons of the sick; from the facts stated it appears that the poisonous particles arise from the excretions, and are mixed abundantly with the cuticular and pulmonary exhalations; hence it is not safe suddenly to throw back the bed coverings, or to be exposed to the breath of the patient, particularly when he coughs or expires fully. It is not safe to enter a small room in which the exhalations arising from the sick are confined, and accumulated; therefore an important safeguard is a free current of pure air.

the power of conveying infection appears to increase with the advance of the disease, and seems greatest at the commencement of convalescence. In fact all prudent means should be adopted to avoid exposure to a full dose of this virulent poison, which, when concentrated, is capable of acting injuriously, even upon those whose health is perfect, and whose strength is unimpaired ; yet there are a few who seem to possess an inherent power of resisting the action of this as of other poisons, unless applied in such doses as to be inevitably fatal.— As to the distance at which it is asserted there is safety, I can say nothing, because I am not furnished with data whereon to ground an opinion. Since the danger of infection depends not merely upon the degree to which the air about the patient is impregnated with morbid matter, but also upon the *degree of health and strength* of the person exposed, it seems to me that precise and unvarying calculations on this subject are not to be relied upon. If the room be well ventilated, and the person who visits the sick in health and in full vigour of mind and body, he may, without incurring risk, approach the patient's bed, and remain near to his person. He should avoid, however, the effluvia confined under the bed clothes, and the breath of the patient labouring under typhus. To avoid exposure to the concentrated effluvia is the first precaution : the second I have to mention and that not less in importance, is, to avoid exposure, even in a slight degree, at a time when the health is impaired, or when temporary debi-

lity or relaxation exist. Hence there is danger in exposure, immediately upon awaking from sleep, or at a moment of exhaustion from fatigue, from fasting, or from any other cause productive of debility. Being chilled with cold renders the frame susceptible of morbid impressions. An excess in eating or drinking, which rarely fails to be followed by exhaustion and debility, produces the same liability to receive disease, as insufficient and unwholesome nourishment. There are states of the atmosphere which produce, in a remarkable manner, this susceptibility of disease; this state of the air may, to a certain extent, be guarded against by attention to clothing, exercise and diet. These views are practically illustrated by the fact, that notwithstanding the great prevalence of fever in Dublin for several months past, the soldiers, which form its garrison, have been unusually exempted from it. This fact I state upon the authority of Doctors Renny and Cheyne.* Thus do we find that unremitting attention to habits of life, to diet, to clothing, to supplies of fuel, and to daily exercise, has preserved the soldier †

* The same fact was stated to me by Dr. Pitcairn at Cork; where although the fever has been extensively prevalent, few cases have appeared amongst the troops.

† There is another reason that soldiers should be exempted from the prevailing fever. The public mind (I allude to the manufacturing classes of society), has within this last year been unusually agitated. The combination system has ruined the manufactories in the Liberty. Thousands have been thrown out of employment; in addition to this the change of currency produced much public anxiety and confusion. From the influence

from a disease with which thousands of the same rank in life with himself, and living in the same place, have been attacked. The same circumstances which render contagion operative, likewise give dangerous efficacy to impressions of cold, which of all is perhaps the most abundant source of disease. To guard the system against the injurious effects of both, the same general means should be adopted.

of these causes then which agitate and depress the publick mind, the soldier, whose health and comforts are looked after, is protected. If we search after the origin of the now prevailing fever, we shall trace it to the united action of many causes; 1st. insufficient or unwholesome diet. 2d, deficient ventilation, which arises chiefly from want of fuel. 3d, anxiety and depression of mind, arising particularly in parents unable to provide the necessaries of life for their children. 4th, the poor being ill clad, are exposed to the injurious influences of atmospheric vicissitudes. 5th, the drinking of ardent spirits, which many, who when in employment were not intemperate, from despair resort to. 6th, all these *depressing* causes give encreasing force to *contagion*, which, without these would have been comparatively inert. The character of the fever which still (though somewhat less extensively) prevails in this city, proves how much the disease has been modified by atmospheric influence. It has had, if I may be allowed to use the expression, an *aguish* character. In many instances the continued fever has subsided into a quotidian or tertian intermittent. The fever has in general been ushered in by a strong rigor, followed by heat and perspiration; the febrile movement has then continued, very frequently, until the fifth day; when a well-marked paroxysm, similar to that with which the fever had commenced, effects a crisis or solution of the disease; but rarely a perfect one, as relapses were unusually frequent, and there were few who, notwithstanding every precaution, escaped a second or even a third attack of the disease. During the fever the pains in the joints, back, and other parts, were very severe, but the symptom most constantly present was

I have met with some cases which incline me to adopt the opinion that the type of fever has not an exclusive connection with its *cause*; that it as much depends upon atmospheric influence or constitutional diathesis, as upon the immediate source of the disease. It is very generally believed that fevers of the intermitting and remitting type, arise exclusively from the marsh miasmata; and that those which assume the continued type spring from the human miasm. Although this is very frequently the case, yet the exceptions are so many as to leave little room to doubt that the type of the disease is determined by other circumstances as well as by that which directly causes the disease. For example, I have been lately attending a gentleman who laboured under well marked intermitting fever, which he had acquired by being exposed to the effluvia arising from a patient affected by ordinary continued fever of the typhoid kind. This gentleman was conscious, at the moment of exposure, both from the disagreeable smell, and from the peculiar sensations he instantaneously experienced, that he had caught the infection. The intermittent fever, in this case, was accompanied with thirst, nausea,

unusual irritability of the stomach, and often of the bowels. Many patients were unable for several days to retain even the smallest quantity of the blandest fluid upon the stomach. The appearances after death pointed to the Intestinal mucous membrane as the most frequent seat of morbid action. The character of the fever is now entirely altered, and though the cases are somewhat less numerous, the disease is become far more formidable.

epigastric tenderness and fullness, coated tongue, pain and fulness of the eye balls. The disease began as a mild continued fever of short duration, and ended in distinct ague of the quotidian kind. The diurnal paroxysms were well marked; the intervals were periods of complete apyrexia. After the application of leeches, and a blister at the epigastrium, the disease was cured by a few doses of the Sulphate of Quina. A similar case is recorded by Dr. Fordyce. An additional proof that the human miasm may cause intermitting fever, is derived from the circumstance already stated, that during the fever which prevailed last Summer and Autumn, many of the cases, after the subsidence of continued fever, assumed a regular and well marked intermitting type. That the fever which thus not infrequently ended in ague, was contagious in its origin, is pretty certain from the fact, that, every nurse, deputy nurse, and porter, engaged at Steeven's Hospital about the fever patients, were attacked with fever of the same character. Amongst the resident medical pupils, those who directed their attention to the study of fever, and spent much of their time in the fever wards, were all attacked with the disease. Of the nurses some died, and one, after repeated relapses, now lies in bed with her lower extremities completely paralysed.

During the present epidemic fever I have seen many instances of the disease in children; in these it assumed uniformly the *remitting* type.

About a year since a nurse in one of the chronick wards at Steeven's Hospital was suddenly oppressed and sickened whilst in the act of turning in the bed a boy labouring under confluent small pox.* The pustules were foul, ill conditioned, without almost any redness of their bases, the accompanying fever typhus : the boy died the day after the nurse had been so affected. She remained ill, but not incapacitated for business for three days ; had then rigors followed by severe fever,—the ordinary typhus of this country. The smell arising from the ill conditioned sores of the body of this boy, was extremely offensive. The nurse had had small pox, and the disease produced was continued fever. Dr. Johnson, Professor of Midwifery at the College of Surgeons, informs me, that he observed in some instances that the ward maids of the Lying-in-hospital caught typhous fever from the patients then affected with puerperal † fever. It is also a curious circumstance that

* The following quotation is made from p. 12, of Willan's Reports on the Diseases in London :

“ Seven out of eleven cases of this disease, (contagious fever) were in one family. The infection seemed to arise from an infant who died about the sixth day of the confluent Small pox, attended with an eruption of purple spots, and a hæmorrhagy.”

† The true character of the epidemic puerperal fever seems to be typhous fever, accompanied with local inflammation of the diffuse or erysipelalous kind. This would also seem to be the true character of the fever which ensues upon wounds received during dissection. Much has been attributed to the effects of the poison applied locally in dissecting wounds. This may have some effect in giving rise to a bad form of disease ; but I am certain, from repeated observation, that much more depends upon the state of the constitution and health at the time, than upon the effects of the poison. For

the fever which is sympathetic of local injury, assumes in different constitutions every variety of type : and that the malaria are capable of producing fever of every type and form : in some conditions of the atmosphere, giving rise to the mildest intermittents, in other states of the air, when heat and moisture are combined with the morbid effluvia, giving rise to remitting and continued fevers of the most virulent kind. Thus would it appear that fever, whether it arise from the human or paludal effluvia, or be symptomatic of local inflammation, may assume the intermitting, remitting, or continued types.

Many fevers arise from strong mental emotions independently of the action of contagion or of morbid effluvia of any kind. The history of a

instance, I have observed that the same poison has been applied to several ;—of these one has not been at all affected, another slightly, a third severely. Is not this precisely what happens in persons exposed to the contagion, productive of one or other of the exanthematous fevers ? I lately attended a numerous family, of whom every one in succession was attacked with Scarlet fever. Two of this family were so mildly affected, as to require no medical treatment ; a slight rash, and a slight sore throat without fever, were the only symptoms ; they did not remain in bed, nor change from their ordinary habits of life ; a third had severe inflammatory fever, with high local inflammation ; a fourth, whose illness was very dangerous, had fever of the typhoid kind, and the local inflammation exhibited a gangrenous appearance. The same difference exists in Small pox : in one a few pustules and healthy, the constitution scarcely engaged ; in a second, high local inflammation, and the accompanying fever synocha ; in a third, the fever typhus, the local disease, unhealthy, fetid, gangrenous. In the same disease, but in different constitutions, how are we to account for this diversity in the symptoms local and constitutional ?

variety of fever not referable to a contagious origin, is given by Dr. Currie, Medical Reports, page 46.

I have seen many severe cases of fever arise slowly and gradually after long continued anxiety of mind, and I was unable to discover any other cause for the disease. I am indebted to Dr. Cheyne for the following brief sketch of fever thus originating; I shall give it in his own words:

“ *Causes*, loss of property, of character; wounded pride. *Invasion*, insidious, indistinct, patient generally unable to assign the date of the commencement of the attack: for some time before he has been complaining of bad nights, or has had symptoms of a common cold, which almost insensibly degenerate into the proper symptoms of fever; then from an ignorance of the nature of his illness he neglects himself, perhaps for many days; and at last, when visited by a physician, he appears utterly unconscious of the formidable nature of his disease, and probably says, that he has no complaint—he is merely very weak; the symptoms are those of the typhus gravior of nosologists: a red suffusion of the eye; prostration of strength; subsultus tendinum; quick and weak pulse; hurried breathing; *den* petechiæ, or a mottled or *morbillary* state of the surface; of such patients a great proportion die. The most remarkable part of the disease is, that it does not spread. I have no recollection of a second case of this kind of fever occurring in a

family, and I never have been able to discover that the patient had been exposed to contagion. It would seem to arise solely from mental causes."

Dr. Cheyne has also furnished me with the following account of another variety of fever not traceable apparently to a contagious source.

"The most remarkable part of the *true miliary fever* is the uncertainty of its duration; it is always treacherous, but it will sometimes not exceed the limits of common continued fever, while at others it will continue for five or six weeks; I have known it endure nine or ten: the peculiar symptoms are suspirious breathing; frequently although not always, a *sudor olidus*, which appears to me to resemble the smell of whey that had been sodden, accompanies the disease. I have detected this kind of fever by the smell, sourish and rancid, before entering the chamber in which the patient lay. Pale urine in large quantity; and a minute vesicular eruption, especially on the sides, and on either side of the clavicles; these are properly vesicles, for I have frequently punctured them; they are not however, so large as the vesicles which sometimes attend rheumatic fever, nor those which attend the *puerperal* miliary fever. There are many successive crops of the miliary vesicle in the course of an illness; and there is generally an aggravation of the symptoms of the disease, particularly of the dyspnoea, for a day or

two before each appears, and an abatement after the eruption takes place : often for whole days the eruption is absent. I think the patients are generally persons of a feeble constitution, who, have had liver disease, or are liable to a disordered state of the biliary, or nervous system ; and not infrequently to hysteria. This disease has certainly no connection whatever with the heating regimen. I have no recollection of a second case of the disease in the same family at the same time. This is no disease for the lancet, nor yet for wine ; mild mercurials, combined with camphor, over night—not every night, with a mild and warm purgative on the following morning. Camphor, blisters, and the lightest kinds of nourishment : the *Acetum opii*, in doses of not more than five or six drops, in camphor julep, with Hoffman's anodyne given over night, will give great relief ; not however at the period when a fresh eruption is about to appear. There are some with whom even the mildest opiates disagree. This is a disease consisting of a succession of paroxysms, I am not able to say exactly at what intervals—perhaps of five, six, or seven days ; their recurrence however is by no means regular. The intervals are not a period of apyrexia, but rather one of moderated pyrexia.”

Some cases of the slow nervous fever (which has been so accurately and well described by Huxham) have fallen under my observation in delicate and nervous females, which, as far as I

These are questions which I am at present unable to answer. The surface upon which the nerves of smell are expanded is of great extent, and unprotected by cuticle. These nerves communicate immediately with the brain, and are connected, in a remarkable manner, with the cerebral functions ; as is manifest from the powerful and singular effects produced in some individuals by pungent and peculiar odours. Some of those exposed to the effluvia emanating from a fever patient, have asserted, that they could not, for a length of time afterwards, get rid of the smell. I have lately heard of a case in which this smell constantly recurred to the memory for some time even after recovery from a severe fever, contracted by a single

forms of typhus is peculiarly offensive, and the patient is in that state, that the slightest scratch, or even moderate pressure, is sure to produce inflammation and gangrene. In fact one of the most remarkable effects of typhous fever when protracted, is to produce in the system a tendency to gangrene, and it is at the advanced stage, and in this gangrenous condition of the body, that the effluvia are at once most poisonous and most offensive. To ascertain the degree of sensation which exists in the nose, when the sense of smell is lost, the following observations were made. A lady after repeated attacks of hysteria, lost suddenly and entirely the sense of smell. This was ascertained by holding to the nose at different times musk, camphor, assafetida and other strongly smelling substances, (whilst the eyes were covered) these she could not distinguish the one from the other, nor did she perceive from them a smell of any kind whatsoever. Yet a pinch of snuff caused violent sneezing : carbonate of ammonia produced its usual stimulating effects. Mustard taken into the mouth affected the nose in the ordinary manner, and the fumes of muriatic acid produced powerful effects.

exposure to the human miasm. A medical student at Dr. Steevens's Hospital whilst opening the body of a man who had *recently* died of most malignant fever, with sloughing sores on the nates, was so powerfully affected by the smell that he was instantly seized with headache, nausea, and prostration of strength. He retired to his room, took some cherry brandy, and after a few hours recovered completely. A precisely similar occurrence took place in the instance of another medical gentleman, upon moving the body of a fever patient recently dead. The body was that of the patient whose case is recorded in Obs. No. 18.

Two cases have been related to me in which the origin of typhus fever appeared to be connected with the effluvia emanating from foul and gangrenous ulcers. Mere putrid effluvia* are capable of killing instantaneously, if applied with much concentration to the sentient extremities of the nerves; if applied in a more diluted form, they affect the system injuriously; and those who live altogether in an atmosphere impregnated with these gases, look pale, pine away, lose all vigour both of mind and body; and sink into premature old age and an early grave. Such also, is the effect of the malaria upon those long exposed to their pernicious influence. Whether or not, a similar effect is produced upon those con-

* Annales de Chimie, Tome 5, p. 154.—The writer states “that the abdominal cavity where putrefaction first takes place, is distended until the confined gas escapes with an explo-

stantly exposed to the human miasmata, I have not had an opportunity of judging. In the action of these poisons, there is a great difference in effect between their sudden and concentrated operation upon the living body, and their more gradual and slow effects when applied in a diluted form and for some length of time. In the first, the action is instantaneous,* and the effect often violent ;

sion ; afterwards there flows out a sanious brownish fluid. This gas has an odour excessively fetid, and is dreaded by the grave-diggers as dangerous in its effects. It has happened often that those employed in opening graves have burst suddenly the abdomen, and have been struck with asphyxia. When exposed at a greater distance to this gas, it gives rise only to vertigo, nausea, feelings of ill health and debility ; these symptoms endure several hours, and are followed by loss of appetite, nausea, and trembling. Such effects announce a subtile poison, which is fortunately not developed, except at the first period of the decomposition of the body. One is led to believe that it is owing to this septic miasm that those who live near burying grounds, and places where animal substances undergo decomposition, are affected with peculiar diseases. May we not believe that a poison so dreadful as to be able instantaneously to kill animals, when it escapes pure and concentrated from the spot where it is generated, is capable, when diluted by the atmosphere, to preserve sufficient activity to produce upon the nerves (*sur les solides nerveux et sensibles*) an impression sufficient to benumb their actions and derange their movements ?”

* “ In some Plagues, persons have been struck dead as with a blast of lightning, without any precedent fever, or even indisposition. It is impossible to account for the immediate operation of the bite of the rattle-snake, which kills often in less than a minute or two, on any other supposition (than that of its action on the nerves and animal spirits) ; nor for the surprisingly sudden effects of some smells, on some persons, which almost *instantaneously* throw the whole frame of nature into the utmost confusion,

In the second it is slow and gradual ; in both there is strong reason to believe that it is upon the sentient extremities of the nerves that the noxious effluvia primarily act. It seems probable that the paludal effluvia act in the same manner as the human : like the latter they are often accompanied with a disagreeable smell. They derange first the nervous functions, and after a lapse of time variable in duration, successive paroxysms of fever arise : the nervous disturbances being primary, the vascular secondary.

and even convulsion. The now well known effects of the stroke of the electric effluvia, not only seem to confirm this notion, but also show the analogous manner in which it is done ; whoever would see more of this may consult the illustrious " Dr. Mead's introduction to the third edition of his Essay on Poisons." "*But the nerves and animal spirits being affected by the contagious miasmata, do not sufficiently and regularly actuate the muscular fibres and vessels ; whence arises great debility, and too weak a vibration of the vascular system, hence the blood in some places runs into grumous concretions, and in others is quite dissolved.*" *Huxham on Fever, p. 106 fourth Edition.* Such are the remarks of one of our best and most accurate writers upon fever. He appears long since to have anticipated the opinions respecting the action of some poisons, which the facts mentioned in this paper so strongly corroborate.

In addition to those facts I would here add another which I was not in possession of when the first part of this paper was sent to press. Mr. M'Dowel, one of the surgeons to the Richmond Hospital was affected some years since, with severe fever, which he informed me, had been acquired in the following manner : He opened the temporal artery of a man advanced in typhous fever, which proved soon after fatal. On throwing back the bed-clothes, he perceived a disagreeable and peculiar smell, and was instantly affected with headache, nausea, and debility, for several days afterwards he continued weak, ill, and without appetite ; fever at length came on which was severe in degree, and of fourteen days duration.

From the facts recorded in this paper we may, I think, venture to affirm that the morbid effluvia floating in the atmosphere, come into contact with the whole of the mucous surface over which the inspired air passes. This then would appear to be the inlet of contagion. This the surface of contact upon which the poison directly acts.

It now remains to make some observations upon the treatment suited to the stage of depression* or the latent period of fever. This is a period of disease during which a physician is rarely summoned to visit the sick. Hence it happens, that there is a deficiency of practical information upon this subject; nor indeed has this period of disease obtained the degree of attention which it undoubtedly merits; for it is a time during which the judicious application of remedies would frequently avail to render the ensuing malady less severe and dangerous: and frequently too a slight ailment, is converted by neglect and mismanagement during the latent period, into a serious and dangerous illness. In conducting the treatment, it is of considerable moment, to be able to learn the origin of the complaint. The diseases which arise from impressions of cold upon the surface, require a different mode of treatment from those which spring from a contagious source. The former will yield more readily and certainly than the latter to medical treatment, and may even be frequently arrested in their progress, and

* This stage appears to correspond with that which Surgical writers somewhat loosely denominate "Irritation."

Emetics however, even at this early period, are are not suited to all cases of fever. Sometimes I have known this remedy produce little other effect than determine morbid action to the stomach, and render that viscus exceedingly irritable during the whole course of the fever. When therefore it is the character of the existing fever to affect principally the stomach and intestines, emetics as also purgatives must be given with caution and reserve : and such emetic medicines should be selected as will not produce either too much nausea or too much debility. This is the reason that Ipecacuanha should in the majority of cases be preferred to Tartar emetic. In cases of disease arising altogether from cold, and where the system is vigorous, the tartar emetic will give a more powerful shock, produce more subsequent nausea and relaxation

asserted that a confessedly contagious disease, as small pox, or measles, cannot be cut short. But even supposing this true, as regards the exanthematous fevers; does it thence follow that a fever of another kind, arising from contagion, cannot be stopped in its career; such an argument supposes an identity in the action of animal poisons, which I am sure does not exist in nature. If typhous fever be the product of the action on the sentient extremities of the nerves of the poisonous effluvia generated in the living body during disease, I can see no reason that the constitution may not (if I may use the expression) extricate itself from the effects of this, as well as of other animal poisons; provided such powerful means be employed in limine, as may give to the constitution a shock sufficient to enable it to throw off disease : yet I do not think that our attempts to cut short contagious fever are as often successful as is generally believed; and I am sure it requires much judgment to determine the kind of case and constitution in which it is safe to make the attempt.

are so singularly beneficial, should be given at the commencement of fever not with a view of cutting short the disease, but with the view of emptying the intestinal canal, and of restoring the secretions: and such purgative medicines should be selected as will accomplish these objects without producing irritation and debility. In some cases, at the very commencement of reaction, a strong emetic-cathartic medicine cuts short the disease; but these are cases not originating purely in contagion, and this happens in individuals capable of enduring a very powerful shock.

The utility of antimonial medicines, particularly of the James's powder, is very great in diseases arising from cold; but as far as I have been able to judge, of little value in contagious fever.

During the latent period absolute rest should be enjoined; every exertion, mental or corporeal at this time, only increases the severity of the approaching fever. All exciting causes of disease, such as exposure to wet and cold, are to be avoided; and also food difficult of digestion should be carefully abstained from: it is very injurious at this time to oppress or overload the stomach.

At this period, if practicable, removal from an unhealthy situation to one in which the air is pure, is highly advantageous.

Mildly cordial diluting drinks should be given freely.

C A S E S
OF
EXCISION OF A PORTION OF THE LOWER JAW
FOR THE
CURE OF OSTEOSARCOMA
AFFECTING THAT BONE;
WITH SOME
OBSERVATIONS ON THE PATHOLOGY
OF
OSTEOSARCOMATOUS TUMOURS.
BY PHILIP CRAMPTON, F. R. S.
SURGEON GENERAL TO THE FORCES IN IRELAND, AND SURGEON
IN ORDINARY TO THE KING.

THE term OSTEOSARCOMA has been applied, even by the latest systematic writers, to two diseases of the bones, which although they resemble each other in several particulars, are nevertheless totally distinct in their nature and tendency. The one is a constitutional disease of a malignant nature, closely allied to, if it be not identical with cancer or with *Fungoid disease*; the other, al-

though in one sense a *constitutional* disease, as arising, (I believe) invariably in a scrophulous habit, is so far *local* that it has no power of contaminating the constitution, or of assimilating to its own nature the parts with which it is in contact. Hence when it proves fatal, it destroys, by the irritation which it excites in the constitution, or by the pressure which it exercises on some organ essential to life.* The particulars in which these diseases agree are, that in each a tumour is formed in the medullary canal, or in the cancellated structure of the bone. As the tumour enlarges the bone undergoes absorption from within, while new bony matter is laid on from without; in this way the bone becomes as it were expanded, ac-

* In the Dictionnaire des Sciences Medicales, Osteosarcoma, is thus defined: "*on doit selon nous reserver l'epithete d'osteosarcome, a la maladie des os qui se rapproche le plus du cancer, des parties molles.*" And in the last edition of Sabatier's *Medecine Operatoire* (1824), M. Dupuytren speaks of "*cancerous affections either in front of or behind the lower jaw, penetrating into its substance,*" as among the causes requiring the excision of a portion of the bone. Professor Gräb of Berlin, gives an account of two cases of what he terms "*Hydrostosis Carcinomatodes,*" in which he removed a portion of the lower jaw with success. In one of these cases "*the cancerous excrescences*" are described "*as nearly filling the mouth, descending into the neck, and involving the glands, muscles, and most important arteries and nerves.*" I need scarcely observe that when cancer, or any analogous disease of a malignant nature makes such ravages locally, the probability that the constitution itself is contaminated is so great, that even if the whole of the parts could be removed by an operation (which in Gräb's case was manifestly impossible), I much question if any surgeon in these countries would feel himself justified in advising one.

commodating its cavity to the size and shape of the tumour. Absorption, however, keeping pace with the growth of the swelling, proceeds more rapidly than deposition, in consequence of which the shell of bone which covered the tumour becomes thinner and thinner, until at length the greater part of it is removed; but the ossific process continuing, small spiculæ and nodules of bone are formed within the substance of the diseased growth. To this I may add that all forms of Osteosarcoma belong to the earlier rather than the later periods of life.*

Yet notwithstanding these circumstances, which are common to every form of Osteosarcomatous tumour, which arises from the cancellated structure of the bone and which in their earlier stages, render it difficult, if not impossible to distinguish between the *malignant* and the *benign* form of the disease, still as the tumour advances to the surface, the

* The distinction between these affections of the bone so similar in their *seat*, and in their *external characters*, but so different in their *nature*, did not escape the observation of Sir Astley Cooper. In his short but invaluable *Essay on Exostosis*, we find under the heads of *Fungous* and *Cartilaginous Exostosis of the medullary membrane*, the two forms of osteosarcomatous tumour, have been described with peculiar force and clearness. Sir A. Cooper's opinion seems to be, that "in the *Cartilaginous Exostoses* the disease in its commencement has nothing of a malignant tendency." My chief object is to prove that the *benign osteosarcoma* is a disease *sui generis*, which exhibits no character of malignancy from its commencement even to its fatal termination, a fact which, if it be fully established, must lead to the most important practical inferences.

distinctive character of each becomes clearly enough developed. The soft bleeding fungus, which makes its way through the integuments before the tumour has acquired any very considerable size—the profuse and *peculiarly* foetid serous discharge, slightly tinged with the red particles of the blood,—the tubercles of a purple colour on the surrounding skin, which adheres firmly to the subjacent tumour—the pain—and above all the altered health, sufficiently point out the malignant character of the disease, and put the surgeon on his guard as to the prognostic he should make, or the operation he should advise.

So long then as the tumour lies deep among the muscles, and is covered by healthy integument, it is obvious that we have no means of acquiring any exact knowledge of its *structure*, and consequently can form but an imperfect idea of its *nature*; we are led however to infer the *benign character* of the disease, when its progress is slow and painless, when the skin is sound and unadherent to the tumour, and above all, when the constitution is unimpaired, and the countenance is healthy. But when the tumour is superficial, as when it springs from the jaw bone where it is covered only by the gum and by the lining membrane of the mouth, the character of the benign form of the disease is so clearly defined, that no surgeon who has once seen a tumour of this kind will be likely to mistake it for any other.

In this case, the first indication of this formidable disease is, the appearance of merely a small swelling or projection of the gum between two of the teeth. The teeth however, soon become loose and dislocated, being forced inwards upon the tongue, or outwards against the cheek ; as the tumour enlarges, it assumes a tuberculated appearance, the tubercles varying in colour from a light pink to a deep purple ; they are firm in structure, perfectly indolent, and do not readily bleed even when roughly handled. As the morbid growth extends in all directions, the mouth is soon filled by the tumour, the lower jaw is forced downwards upon the forepart of the neck, the tongue is pushed backwards into the pharynx, the mouth is carried to the side of the face opposite to the tumour, and before the patient sinks under his sufferings, a tumour is sometimes formed which nearly equals the bulk of the head itself.* It is gratifying however, to be able to state, that even under such deplorable circumstances, life has been preserved, and the hideous deformity removed by an operation which must be considered as one of the boldest and most successful of which modern surgery has to boast.

But, it is from the *internal structure* of Osteosarcomatous tumours, as developed in the course of operations undertaken for their removal, or by dissection after death, that the true and distinctive

* See case of Mahony, related by Mr. Cusack in this Vol. of Reports.

spicula, or small grains of earthy matter with which its substance is beset. If the tumour acquires any considerable size, it is usually found to contain cavities filled with fluids differing in colour and consistency, but in general the fluid is thickish, inodorous, and of the colour of chocolate. Sometimes the growth of the tumour, or the secretion of the fluid within its substance, is so slow that the deposition of bony matter keeping pace with the absorption, the bone becomes expanded into a large and thick bony case, in which the tumour is completely inclosed. There is a beautiful preparation of this form of the disease, in the Museum of the Royal College of Surgeons ;* But in general the walls of the cavity consist of cartilaginous structure mixed with bone, the bone bearing but a small proportion to the cartilage.

The extent to which this description of tumour may encrease without materially affecting the general health, is one of the most extraordinary circumstances connected with its history.

CASE.

A gentleman about 38 years of age, who for 17 years laboured under an Osteosarcomatus tumour, which grew from the upper part of the Os femoris, continued until within the last three months of his life to delight the society in which he lived by the charms of his conversation, and

* Marked B. 30. See also plate.

by the exercise of his unequalled musical talents. Before his death the tumour acquired an almost incredible magnitude, it measured (including the thigh) six feet six inches in circumference. A few hours before his death he vomited several quarts of a brownish colour fluid, and died in the act of vomiting, in consequence of some of the fluid regurgitating into the trachea, and causing suffocation.* The body was carefully examined on the following day by my friend Mr. M'Namara and myself; all the viscera were perfectly sound. The tumour formed a vast cavity, the walls of which varied in thickness from six to twelve inches; the cavity contained several quarts of a fluid which in colour, odour and consistence, exactly resembled that which had been vomited for some hours before death.† The walls of the tumour consisted of a firm cartilaginous structure, intermixed with bone, the bone being deposited in flat plates, on the outer surface and in

* In its earlier stages, this case was seen by Sir A. Cooper and Mr. Abernethy in London, and by the Baron Dupuytren in Paris. It was however during the last three years that the tumour acquired such an extraordinary developement when Sir A. Cooper and Mr. Abernethy saw it in the year 1817, (four years previous to the death of the patient), the tumour including the thigh measured about three feet six inches in circumference.

† I do not venture to offer an explanation of this extraordinary fact; it is plainly referable however to the obscure laws of Metastasis, which must be admitted to exist, although they do not (perhaps) in the present state of our knowledge admit of a satisfactory explanation.

small nodules (about the size of grains of shot) on the inner surface of the cavity. It appeared plainly that the tumour was enlarged by the constant deposition of a semitransparent gelatinous matter in large hemispherical granulations, each about half an inch in diameter; these gradually became consolidated into a substance resembling cartilage, and in the centre of each of these granulations was a small nodule of bone; a part of the tumour had passed over the brim of the pelvis, and pushed into its cavity, but the peritoneum was unbroken, and no connection could be traced between the cavity of the tumour and the intestines; in fact the cavity did not extend beyond the upper part of the thigh, and was completely enclosed by the thick cartilaginous and bony walls. Nothing remained of the os femoris except its head, and about four inches of its lower extremity; nevertheless so firm were the walls of the tumour, that, to the last, the patient was able to support his weight, and even to walk upon the diseased limb. The stomach, which appeared to be totally free from disease, contained about a pint of fluid perfectly similar, in all its apparent qualities, to that which was found in the cavity of the tumour. That there was nothing *malignant* in the character of this tumour may be inferred from the circumstance of its having subsisted for seventeen years without exerting any unfavourable influence on the general health, from its never having ulcerated, or thrown

out a fungus, and from the absence of all disease in the glandular system or in the viscera.

The following case exhibits an instance of this formidable disease in its earliest stage, and shows how much pain, deformity and danger, may be averted by a timely and decisive operation.

CASE.

Mrs. R. of Carlow, aged about 25 years, of a remarkably healthy and robust appearance, applied to me in January 1818, on account of a small tumour on the gum, which she said “had loosened one of the teeth.” I found, on examination, a tumour about the size of a horse-bean, projecting from the alveolar process, between the two small molar teeth ; it was firm in its texture, smooth on the surface, and of the colour of the gum from which it seemed to proceed ; both molar teeth were loose, and the crown of one of them was pushed inwards upon the tongue. The dislocated tooth was extracted, the tumour was cut away by a strong and sharp pointed knife, and the actual cautery was then applied to the wound. Mrs. R. was apprized by Mr. Colles and myself, that the disease would be likely to recur, and she was advised to lose no time in returning to Dublin, in the event of our apprehensions being verified. Mrs. R. left town a few days afterwards, but returned in the month of June with a new tumour of the same kind, much larger than that which

had been before removed, but springing from the same spot. It was plain that nothing was to be expected from an operation, such as had been before performed, as the tumour obviously arose from the *cancellated structure* of the bone *below* the extreme points of the fangs of the teeth which it had displaced. A triangular portion of the jaw bone, including the sockets of the two small molar teeth was therefore removed by means of a fine watch-spring saw, and although the surface of the divided bone appeared sound, it was thought adviseable to apply the actual cautery. The wound healed kindly, and Mrs. R. left town in three or four weeks, apparently perfectly well. Previously to my writing this paper, being anxious to ascertain whether or not Mrs. R. had suffered from a return of the disease; I wrote to Dr. Read, the respectable surgeon of the County of Carlow Infirmary, and requested of him to see Mrs. R. and acquaint me with any particulars which he might learn from her respecting the result of the operation. I had the satisfaction of receiving the following answer to my enquiries from Dr. Read on the 6th of December, 1826.

Carlow, December 5, 1826.

Dear Sir,

I had the honor of receiving your note of the second inst. on Sunday, which I would

have answered sooner, but that I waited to see Mrs. R. which I had not an opportunity of doing before this day. She says you performed the operation on her lower jaw seven years ago. She is at present in excellent health, and has had five children since that period. The tumour has not made its appearance since the last operation. I examined the jaw this day; it appears perfectly natural and healthy. She says she is very grateful to you for her life, and will call on you the first time she goes to Dublin.

I remain, dear Sir,

Your very obliged Servant,

ARTHUR READ.

In the following case the disease had proceeded much farther, and the operation was proportionally more severe, as in order to remove the whole of the disease it was necessary to cut out two-thirds of the lower jaw, through its whole depth.

CASE.

Elizabeth Howard, aged 18, of a delicate form and complexion, but enjoying excellent health, applied to me in the year 1818 on account of a swelling on the left side of the lower jaw bone, which extended from the first small molar tooth to the first incisor on the same side; the teeth were

all sound and firm in their sockets, the swelling gave her no pain, but caused some slight deformity, which as she was in other respects particularly good-looking, she was desirous of having removed. I explained to her the nature and tendency of the disease, and the severity of the operation which she would have to undergo for its removal; this I suppose alarmed her, for I saw no more of her until the month of May, 1824. During the intervening six years the disease had greatly extended, and her countenance had undergone a most striking change. In consequence of the projection of the lower jaw she looked, although but 24 years of age, like a woman of 70 or 80, but this was not all; upon the supposition that the tumour was merely attached to the jaw, an attempt had been made to remove it by an operation. The operation was succeeded by a smart hæmorrhage, which recurred from time to time, from an irregularly shaped fissure upon the internal surface of the tumour. On examining the swelling it appeared plainly to be formed by an expansion of a portion of the lower jaw, extending from the second small molar tooth on the left side to the second large molar on the right. The tumour was about three inches and a half in depth, and extended backwards as far as the base of the Os hyoides. The poor woman, who was exhausted by repeated losses of blood, and who was aware that the disease was rapidly progressive, was now willing to submit to any operation which might be judged

portion of the jaw, close to the bone, from below, and the membrane of the mouth from within, the whole of the tumour was, with great ease, *drawn out* from the parts by which it was surrounded, but to which it had but very slight cellular attachments. No vessel of such a size as to require to be secured by ligature was wounded in the operation, for the trunk of the labial artery, which was exposed on the right side, was drawn aside by an assistant. The flap of skin was replaced and secured by two points of suture, supported by adhesive plaster, and a suitable bandage. The operation was succeeded by so little constitutional disturbance that the patient remained but one day in bed. The whole of the external wound united by the first intention, and in a few weeks the woman returned to the north of Ireland in perfect health. It is worthy of remark that the portions of the lower-jaw, which remained on either side, became united by a ligamentous structure of such firmness, that in the act of "opening the mouth" the lower jaw descended as firmly, and with as uniform a motion, as if its continuity had never been broken.*

* It can in no degree detract from the credit of Mr. Dupuytren (to whom unquestionably is due the merit of having been the first to perform the excision of a portion of the lower jaw,) to state, that I had seen no account of his operations, nor of those subsequently performed in 1821 by Mr. Mott in America, and by Mr. Gräb in Berlin, at the time the operations which I have just described were performed. The first account which I

The following Case illustrates the external character of the *Malignant* as opposed to the *Benign Osteosarcoma* of the lower jaw :

In the month of September, 1825, Mr. Cusack directed my attention to the case of a man of about fifty years of age, in the Long-ward of Steevens's Hospital, who had a large osteosarcomatous tumour, proceeding from the angle of the lower-jaw. Internally the tumour was formed by a large, soft, and bleeding fungus not unlike a soft wart, in which the molar-teeth were imbedded, and which poured out a sanies having an insufferably fetid smell. Externally, the skin was hard, slightly tuberculated, adherent to the tumour, and in parts of a dull purplish colour. The submaxillary gland, which was of a stony hardness, was enlarged, and apparently consolidated with the jaw bone. I at once gave it as my opinion, that this was no case for operation, an opinion in which Mr. Cusack and the

can find of Mr. Dupuytren's operations is contained in the 22d vol. of the Dict. des Sciences Med. and in his Edition of Sabatier's "*Medicine Operatoire*," published in 1824." The account of Gräf's operations was first published in these countries about a year ago (as I think) in the *Lancet*, and the first accounts of the American operations is contained in Professor Patison's edition of Burn's *Anatomy of the Head and Neck*, 1824. That the operation was not known in Great Britain until a very late period may, I think, be inferred from the fact that no allusion is made to it in Mr. Cooper's excellent *Surgical Dictionary*, published 1823, nor in any British periodical journal of an earlier date than 1824.

other surgeons of the Hospital entirely concurred. In a few weeks the skin ulcerated, and the side of the face and neck was occupied by a frightful cancerous ulceration, which laid bare the muscles of the neck down to the trachæa and œsophagus.

The *internal structure* of osteosarcomatous tumours of a malignant nature has been so often and so well described by British pathologists, that I should not have thought it necessary to enter more at large upon the subject, were it not that the different views which are entertained in Great Britain and in France with respect to the *nature* of these affections, makes it necessary to refer in a particular manner to their structure, in order to ascertain how far those opinions are founded on exact observations or on just analogies.

In France and I believe, in Germany all osteosarcomatous tumours are considered to be of a malignant nature, and in fact to be identical with cancer, modified however by the peculiar structure of the part which they affect. The fungus hæmatodes of Mr. Hey, and the medullary sarcoma of Mr. Abernethy are included under the same comprehensive term; and we accordingly find cases of (what in Great Britain would be considered as) Fungus Hæmatodes *commencing* in the soft parts, and *extending* to the bone, described as osteosarcoma, or cancer of the bone itself. In these countries, on the contrary, the

was much impaired, and her aspect was almost cadaverous; her memory seemed much impaired, and there was a general insensibility to external impressions; she was depressed in her spirits, yet she made but little complaint. On an attentive examination it was plain that there was some fullness in the situation of the temporal fossa, but the tumour was perfectly indolent and incompressible. I did not see the lady again for four or five weeks, when I found her nearly comatose; the swelling on the temple had increased to a considerable degree, and the eye was still further protruded from the orbit. She expired in a few days, and on the day following her death, the head was carefully examined by Mr. Macnamara and myself. On raising the aponeurosis of the temporal muscle, the temporal fossa was found to be occupied by a greyish coloured substance of the consistence of brain; the muscle itself had completely disappeared; numerous spiculæ of bone, proceeding from the frontal and temporal bone, passed into the tumour, of which they constituted a considerable part. On opening the head a tumour of precisely the same description, beset in the same manner by bony spiculæ, was found lodged between the dura mater and the internal orbital process of the frontal bone. On macerating the bone it exhibited the most perfect specimen I have seen of the "*fibrous exostosis*," the spiculæ proceeding both from the outer and the inner table of the cranium were each about as thick as a hog's bristle, and about $\frac{3}{4}$ th of

an inch in length ; they were set as closely together as the hairs of a brush, and extended in an undulating line over a space of about two square inches in extent.* The tables of the skull were slightly separated from each other in the part corresponding to the exostosis, and the diploe seemed to contain some of the same brain-like matter which formed the bulk of the tumour. It is of course impossible to decide whether in this case the disease *commenced* in the soft parts, or in the bone ; but it seems probable that it commenced in the bone, because the spiculæ were furnished by the bone itself, and not by the periosteum or dura mater, which were separated by the tumour to the distance of nearly an inch from the outer and inner tables of the skull respectively. In *malignant osteosarcoma*, however, it is more usual to find a deficiency than an excess of bony matter, for although spiculæ of bone are interspersed through the brain-like matter which forms the bulk of the tumour, the bone itself is usually divested of its earthy basis, and is converted into a steatomatous or cartilaginous substance. Sometimes, however, the tendency to secrete phosphat of lime is surprizingly encreased, and then large and singularly shaped masses of bony matter are thrown out from the surface of the diseased bone.†

* See Preparation, B. 26, Museum of the College of Surgeons, and Plate.

† See Preparation No. 9 and 10 in the Museum of the Royal College of Surgeons, in which the earthy deposition from the head of the tibia weighed several pounds.

The existence of these varieties in the *structure* and in the *nature* of tumours proceeding from the bones may perhaps admit of the following explanation :

The *cellular parenchyma*, or organised matrix of bone, like every other organized structure of the animal system, is liable to inflammation ; but the *character* of that inflammation, whether *acute* or *chronic*, *simple* or *specific*, will be determined by the character of the constitution in which it is excited.

Thus in a cachectic habit, when there is a predisposition to morbid actions, on the application of any disturbing influence, the inflammation will be likely to excite, or to terminate in, diseased actions, the product of which may be cancer, medullary sarcoma, or some analogous disease of a malignant nature. If the inflammation on the contrary be excited in a scrophulous habit, the morbid structure to which it gives rise will preserve the scrophulous character, and the result will be a diseased growth, sufficiently intractable under any treatment, but still possessing no character of malignancy.

In a healthy constitution the inflammation will probably subside without causing any permanent alteration in the structure of the bone, or it may terminate in simple abscess or necrosis.

allied to cancer, or to fungoid disease, and like those diseases so prone to contaminate the constitution, as well as the parts with which they are in contact, that the removal of the diseased part rarely serves as a protection to the system, from a return of the disease; that others, on the contrary, are without any character of malignancy, and so purely local in their nature that where the removal of the *whole of the disease*, however extensive, can be effected, the operation may be undertaken with the best prospect of affording permanent relief.

P. S. Since this paper was sent to the press I have been so fortunate as to see a copy of M. Richerand's late work entitled *Histoire des progrès récents de la Chirurgie*, written, as he informs his readers, upon the plan of Mr. Sharpe's "Critical Inquiry." The reputation of M. Richerand as an author, and his connection with one of the principal hospitals in Paris, entitle his work to be considered as fairly representing the state of surgical opinion and practice in the metropolis of France. It appears then, that the opinion respecting the *cancerous nature* of Osteosarcomatous tumours is still universally maintained; their removal by operation is advised, not from any expectation that it will prove successful in curing the disease, but merely "to sustain the hopes of the patient."* M.

* C'est surtout pour, les dérober à cette terrible extrémité (desespoir) que nous croyons le chirurgien autorisé à opérer, p. 211. It is due to M. Delpech to state that he dissents from this opinion of M. Richerand's, while he maintains the incurable nature of osteosarcoma.

A CASE

OF

CYNANCHE LARYNGEA,

**IN WHICH THE OPERATION OF TRACHEOTOMY WAS
PERFORMED IN MARCH 1825, AND A CANULA
WORN UP TO THE DATE OF THIS REPORT,**

BY FRANCIS WHITE,

**MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND, AND
ONE OF THE SURGEONS OF ST. MARY'S HOSPITAL AND
DUBLIN EYE INFIRMARY.**

ON the 10th of March 1825, I was called to see John Duff, Cabinet Maker, 33 years of age, a thin delicate looking man. He was sitting up in bed, bent forwards, and labouring under the following symptoms : his breathing was hard and hissing ; he had constant fits of suffocative coughing, and expectorated with difficulty some mucus. Pulse 130 ; tongue foul : he referred to the region of the larynx as the principal seat of his uneasiness, he could not bear much pressure upon the part ; there was no external swelling ; the fauces were redder than natural, and slightly

relief from further medical treatment, and at 11 o'clock, P. M. finding his situation so alarming, I proceeded to the operation assisted by Messrs. H. Carmichael and T. Roney. Having made the external incision of sufficient length, and cut through the fascia, I came down on the muscles, and on separating the edges of the sterno-thyroid muscle, the two thyroid veins were exposed, together with a considerable arterial branch, * the pulsation of which was quite perceptible, directing its course upwards towards the cross slip of the thyroid gland: having pressed aside the artery and one of the veins with my finger a little to the right, I then cleared away some cellular membrane: and laid bare the trachea: a sharp pointed bistory being now introduced between two of its rings, I cut directly upwards about half an inch in length, when the air escaped with considerable force, and much muco-purulent matter was expelled. Finding a mere division of the part not sufficient to allow a free discharge of the accumulated fluid, which was of a viscid ropy nature, I cut off lateral slips of the cartilages, which leaving ample space, the patient breathed with freedom and expecto-

o o 2

* From the situation of this artery, there can be no doubt of its being that branch which Mr. Harrison, in his work on the Surgical Anatomy of the Arteries, describes under the appropriate name of Middle Thyroid Artery; and though looked upon as an irregular distribution, yet, from its frequent occurrence, the surgeon should be on his guard, as wounding an artery in such depth of parts might be attended with most embarrassing circumstances during the operation.

bore without any uneasiness, and from which he seemed to derive considerable relief. He made several attempts to breathe through the glottis, but to no effect, and on the 14th of April, his former symptoms returned, and became so urgent that I was obliged to enlarge the opening. I had introduced an ivory canula of a conical shape, and slightly curved, which filled up the entire opening, but was only admitted so far as to lie in contact with the edges of the tracheal aperture. This instrument has answered so well, that the patient at present wears it attached to a leathern stock which he buckles behind his neck, and is sufficient to keep the tube in its proper situation. It is occasionally taken out in order to wipe away the mucus which gathers about it.

It is now two years since the operation was performed, and the patient, whom I saw this day (March 17,) has during that time worn the tube without any inconvenience, or being in the least prevented from working at his trade. The sides of the opening, which is of an oval shape, and one inch in depth to the trachea, are perfectly healed, smooth, and covered with a thin cuticle. The rima glottidis still remains closed, yet not so much so but to yield to slight expiration, while he is incapable of performing the act of inspiration through the glottis: or of speaking without closing the aperture of the canula with his finger. On examining the fauces, the epiglottis appears thickened and standing erect. The

artery, which was met with in the operation, situated on the anterior surface of the trachea, can be plainly felt at the inferior part of the opening.

On this disease it is unnecessary for me to offer either remark or observation, the subject having been long since acutely and ably treated by Messrs. Laurence, C. Bell, Carmichael, Porter, and others : but I cannot help submitting, with every respect for the talents and experience of Mr. Bell, that his remarks on the operation of tracheotomy are not justified by the result of this case. When he asserts that all we can expect is a “ temporary relief ” that “ the opening has a “ natural tendency to close, and the means of opposing that disposition must produce irritation,” he advances an opinion which not only may prevent the more general adoption of this beneficial and important operation, but which is also in direct opposition to the present state of this patient, and to the well known case of Mr. Price of Plymouth, who has worn a tube during ten years.

In conclusion, I shall only observe, that notwithstanding the statement in the Medico-Chirurgical Review, I fully concur with Mr. Carmichael, whose opinion as to the necessity and practicability of cutting out a lozenge of the trachea, has been fully supported by my experience of this case ; nor have I had reason to think that a previous application of blisters would have at all prevented the operation as recommended by Mr. Carmichael.

A
BRIEF NOTICE
OF THE
EFFECTS OF THE VAPOUR BATH
IN
TETANUS.

BY
H. MARSH, M. D. M.R.I.A.

ASSISTANT PHYSICIAN TO STEEVENS'S HOSPITAL,
&c. &c.

THE first case of Tetanus in which the vapour bath was employed occurred in one of the surgical wards of Dr. Steevens's Hospital. The patient was a boy between five and six years of age. The paroxysms were severe and very frequent: the symptoms of tetanus came on gradually several days after the boy had sustained an injury in the great toe of the right foot. He was a patient of Mr. Wilmot's. Calomel in large doses, with purgative medicines, having failed to act upon the bowels; and opium freely administered not appearing to mitigate the symptoms, I mentioned to Mr. Wilmot my wish that the vapour bath should be tried. Mr. Wilmot expressed his

readiness to adopt any mode of treatment, which in so terrible a disease, might afford a reasonable prospect of advantage. The boy was placed in a vapour bath, the heat of which was not allowed to rise beyond ninety degrees. He remained in the bath six hours. The paroxysms became less violent and less frequent. A third of a drop of croton oil (selected on account of the smallness of its bulk, as the patient was scarcely able to swallow) was given every third hour; after the fourth dose it operated violently.—A liniment of extract of belladonna and oil of amber was very frequently rubbed along the spine. This plan of treatment (the bath being employed uninterruptedly for four, six, and sometimes eight hours at a time) was persevered in for many successive days. The boy slowly and with much difficulty recovered. Upon removing him from the vapour bath it was found that the sore which had been foul and unhealthy, began to improve in appearance; and after repeated applications of the vapour (all dressings having been removed) it assumed a granulating, clean, and healthy aspect.

4
The second case in which this remedy was employed was in a boy of twelve years of age. The disease arose from an injury of the ankle joint; it was very severe, and at length terminated fatally. The uniform effect of the vapour bath was to abate the violence of the paroxysms, without however influencing in the slightest degree the permanent rigidity of the muscles. In this case it

appeared to me that sufficient pains had not been taken to nourish the patient, and to support his strength. He died worn out and exhausted after a protracted disease, the tetanic symptoms having disappeared for more than thirty hours before death.*

In one other case was the vapour bath used: the patient was admitted into hospital, under the care of Mr. Cusack. Calomel and opium were freely given; ptyalism apparently without benefit was established. It was then resolved to put the patient into the vapour bath. This man, despairing of recovery, would not at first consent to be placed in the bath. Having been at length prevailed upon, and having experienced the benefit resulting from its use, he was himself most anxious for its continuance. It was steadily persevered in for many successive hours daily, and often during the night, until every symptom of the disease had gradually subsided. In this case the severity of the paroxysms was remarkably diminished by the action of the vapour bath: the patient was allowed wine, malt liquor, and animal jellies in abundance. In this and the other cases, the patients were enveloped in a flannel bag,† to which, at the lower

* I examined very minutely the body of this patient; neither in the spine, nor in any other part, could the slightest morbid appearance be detected.

† The plan of the vapour bath employed was given me by Dr. Macartney, Professor of Anatomy, &c. in the University. It is simple, convenient and easy of application, and adapts itself to every posture in which the patient may be placed. That which I

part, a small tin boiler was attached; underneath this a spirit of wine lamp maintained an abundant supply of vapour. The temperature was regulated by a thermometer introduced into the flannel envelope.

The mode of treatment then, which appears to me to deserve further trial, consists in placing the patient for many successive hours in a vapour bath of *a low temperature*; and at the same time in powerfully upholding and supporting his strength. This mode of treatment does not interfere with the adoption of other remedies, and should it not be found to effect more than to abate the violence of the symptoms, and to lessen the sufferings of the patient, surely it would, on this account alone, deserve a further and more extensive trial.

now employ is a bed whereon the patient lies, covered by a canopy which encloses the patient's body, his head only being extant. This canopy confines the vapour, and the temperature is regulated by a Thermometer.

ACCOUNT
OF A
REMARKABLE PRODUCTION,
RESEMBLING A TAIL,
WHICH WAS ATTACHED TO THE EXTREMITY OF
THE VERTEBRAL COLUMN OF A MAN.

By ARTHUR JACOB, M. D.

&c. &c.

I AM indebted to my father for the specimen of remarkable monstrosity which forms the subject of the present notice. In the course of last summer a young man presented himself at the Queen's County Infirmary seeking relief, on account of a tumor which projected between the nates, and caused much inconvenience from its bulk, especially in the sitting posture. It had existed from birth, was about the size of the closed hand of a large man, and was situated upon the lower part of the sacrum, apparently involving the os coccygis. Upon its most convex part was an orifice through which the finger could be introduced, and passed round an irregular resisting body, which partly projected through this opening. The surface was covered by sound skin, furnished with a considerable quantity of hair. The operation of removing it was performed by my father. On dividing the external layer, it appeared that this was

Systema Naturæ* of Linnæus (cura Gmelin) I must say that I very much doubt whether the pretensions of this individual to such distinction be well founded.

That it resembled a tail in its external characters I admit, but dissection proves that the bones which occupy the centre bear no resemblance to *vertebræ*, but on the contrary that they are such as might belong to a man's great toe; consisting of a tarsal bone, (probably the internal cuneiform) a metatarsal and phalanges. It in fact appears to be an example of that description of monstrosity which has often been observed in other situations, a rudiment or portion of an additional limb or extremity. This one is however remarkable from its consisting of but one series of bones out of the five, as well as from the situation which it occupied.

Of supernumerary limbs or extremities attached to various parts of the body we have abundance

* This variety of the human race has been established on the following notable relation of Nicolas Tulpus (*Observationes med. lib. iv. cap. x.*) headed *Juvenis balans*. "Allatus Amstelredamum, omniumque oculis expositus fuit Adolescens sedecim annorum qui in *Hiberniâ*, a parentibus forte devius, inter oves sylvestres, ab incunabulis altus, induerat quasi naturam ovillam; corpore pernici, perpete pede, vultu truci, carne durâ, cute exusta, artubus strictis, fronte ut obtusa, ac depressa, sic occipitio convexo, ac tuberoso, rudis, temerarius, imperterritus, et exors omnis humanitatis; cætera sanus, et optime valens, destitutus voce humana, balabat instar ovis, et aversatus cibum, potumque nobis usitatum, manducabat solum gramen, ac fœnum, et quidem eo delectu, quo curiosissimæ oves."

of examples on record. I extract the following remarkable instances from Haller's *Essay on monsters*, (*opera minora*, T. iii. p. 50) "Puer cui tertium crus a dextro femore oriebatur, pendulum, mobile, absque rotula, digitis octonis, quorum duo medii majores essent. Puer tripes, pede superfluo, supra genu exeunte. Vitalis puella pede tertio ejusdem cum reliquis magnitudinis; in eo hallux bene factus, reliqui digiti imperfecti. Fetus crure tertio sub cute latente. Fetus cum crure ex hypogastrio prodeunte. Fetus capite nimis grandi, *pede ex natibus prodeunte*, absque tibia. Fetus *cum sacco cutaneo sub nate* in quo humerus, et digitus, et reliqui artus latere videntur." This last appears to have been an example similar to that which I have noticed.

The records of medical science are not destitute of examples of tail bearing men.* In the *Miscellanea curiosa Academiae naturæ curiosorum*, (Anni 1690, p. 222) we have an account of an "*homo caudatus*" by Emanuel König, the subject was the son of a Doctor of laws, and his tail which was half a span long, grew directly down from the os coccygis, and was coiled toward the perinæum, causing much discomfort. Stephen Blancardus of Amsterdam, in a work which I have not seen, states that he had examined a man from whose

* It is remarkable that these examples should have escaped the notice of Lord Monboddo, anxious as he was to prove the existence of *homines caudati*. The instances brought forward by him are evidently derived from fabulous sources.

sacrum a tail depended fully a span in length. In the same *Miscellanea curiosa*, (an. 1688) we have a communication from one Michael Lochner, "De puero caudato," which being very brief, and written in a merry vein, is I think entitled to credit. I therefore subjoin it without apology. "Puer annorum octo (nomine et loco ob certas rationes parco) nec pinguarius nec carnarius, sed gracilis admodum, facieiue Hippocraticæ, parentibus concomitantibus opem meam obnixè implorat. Sciscitor morbum, heu! altum silentium! et pater et mater et gnatus mutus Hipparchion; quisque eorum

Erubuit stupuitque, omnesque verecundia motus
Abstulit.

Insto interrogando, tandemque has silentii scaturigines et pudorem intempestivum cum denique removissem, a parentibus comperio inspectione opus esse. Subiit animum de ventre inspicendo, ast illam inspectionem non efflagitabant quippe puerulus erat, sed alium locum, cujus in titulo nulla mentio, evolvunt, remque altioris indaginis, infimi tamen subsellii esse referunt; remotis nempe caligis peccantis pueritiæ bifolium Calendarium (sic Barlaeus stylo Gruteriano, salsé nimis nates pueri denominat) ostentant. Visui tunc propé hedram se offert excrescentia oblonga, cylindrica rigiducula, deorsum tamen intra clunes inflectenda, paululum mobilis, doloris expers, longitupine digiti medii, crassitie pollicis, ejusdem cum

cute coloris, consistentia introrum versus osse.
 Amputationem anxie desiderant, cum eam crumenumulga lotio-physica et fastuosa medicastra
 (quarum in Noride nostra tot reperibiles

——— grues quot Strymonis unda
 Excipet vel Phrygios Mæander olores,

suaserit. Me renuente amputationemque istam
 dissuadente cum nihil exinde calamitatis, excepto
 incommodo sessitationis, senserit, læti parentes,
 stipulata prius alti silentii fide cum Ascaniolo
 caudato recedunt.

I have been assured by a person of veracity who states the fact from actual observation, that he knows an individual who has a production or continuation from the os coccygis, which can be felt through the clothes, and causes inconvenience when the person sits ; and that it is generally believed that several members of the same family have a similar appendage. Whether all the examples to which I have alluded, resembled that which I have examined, I do not pretend to decide, but from the bony centre of Michael Lochner's specimen, I think it was probably of the same nature. Whatever doubts may be entertained respecting these productions, there can be none that this is the first instance where the doubtful member has been amputated, and the patient relieved from discomfort and reproach.

FINIS.

Fig 1









DESCRIPTION OF THE PLATES.

PLATE I.

Honora Doyle, before the operation, page 4.

PLATE II.

Honora Doyle, after recovery from the operation, page 9.

PLATE III.

James Mahony, before the operation, page 23.

PLATE IV.

Enlargement of left lower extremity, page 55.

PLATE V.

Enlargement of the hand, with cutaneous inflammation, as it appears during the exacerbations, page 62. This figure is necessarily represented on a diminished scale.

PLATE VI.

Emphysema of the lung, page 84. The upper portion to the right, represents a large single cavity, immediately under the pleura, and with membranous transparent parietes externally.

PLATE VII.

Dilatation of the bronchial tubes, page 84.

- A. A bronchial tube, greatly dilated, and laid open.**
- B. Ditto.—The cartilaginous rings evident in the superior portion.**
- C. The condensed pulmonary tissue.**
- D. A compressed bronchial tube, which had previously been recently dilated.**

PLATE VIII.

Portion of the humerus, removed from A. Gordon.

- AA. Caries effecting the inner condyle.**
- B. The olecranon slightly carious.**

PLATE IX.

Portion of the femur removed from Anne Lynch.

- A. Caries affecting the inner condyle.**
- B. The patella.**

PLATE X.

Represents portions of the femur removed from Susan Conolly.

Caries affecting both the condyles, which are nearly stript of their cartilages.

The carious Patella.

The upper figure represents the surface of the femur stript of its periosteum.

And the shell or walls of the bone rendered thin by disease.

PLATE XI.

OSTEOSARCOMA OF THE LOWER JAW, FORMING A PERFECT BONY CYST.

The thin bony walls of the cyst are here represented, and the bony septa dividing the cyst into cells of different sizes.

PLATES XII. AND XIII.

Have been cancelled, having failed to illustrate the structure of the tumor, which was removed from Eliza Howard. See p. 542.

PLATE XIV.

An ulcer of a peculiar character which attacks the eyelids and other parts of the face, page 233.

In this plate is also a representation of Dr. Jacob's cataract needle,

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